City of Carlsbad

CARLSBAD VILLAGE, BARRIO, AND BEACH AREA PARKING STUDY

DRAFT FINAL

Technical Memorandum #1:

Data Collection

June 29, 2017

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Introduction

The City of Carlsbad is currently in the process of developing a Village and Barrio Master Plan in an effort to not only revitalize the Village, but also to rejuvenate the Barrio. During this planning process, it was realized that in order to identify parking management strategies and provide recommendations, it was necessary to conduct a thorough analysis of existing parking conditions, as well as collect additional parking data. The intent of this parking study is to develop a Parking Management Plan that will provide recommended near-term and long-term strategies to maximize efficiency of parking and improve mobility in the project area. The Carlsbad Village, Barrio, and Beach Area Parking Study is being developed with the following goals in mind:

- Make parking more convenient for community members and visitors
- Promote more efficient use of existing parking
- Support future parking needs
- Explore options for making the project area more inviting for walkers, bicyclists, and people who use public transportation to support the vision outlined in the Village and Barrio Master Plan

The driving force behind the Village, Barrio, and Beach Area Parking Study was the need for more data to better understand current parking conditions – particularly parking occupancy, demand, and behavioral data. During the development of this study, two rounds of weekday and weekend License Plate Recognition (LPR) data collection were conducted to capture the existing parking behaviors in the study area. As a result of this effort, parking occupancy and turnover data were captured, and an updated inventory of all available parking spaces was created.

Additionally, community participation and feedback is a crucial component of the development of this plan. Stakeholder feedback has been captured through public outreach, on-site surveys, and an online survey, and will continue to be captured through community meetings.

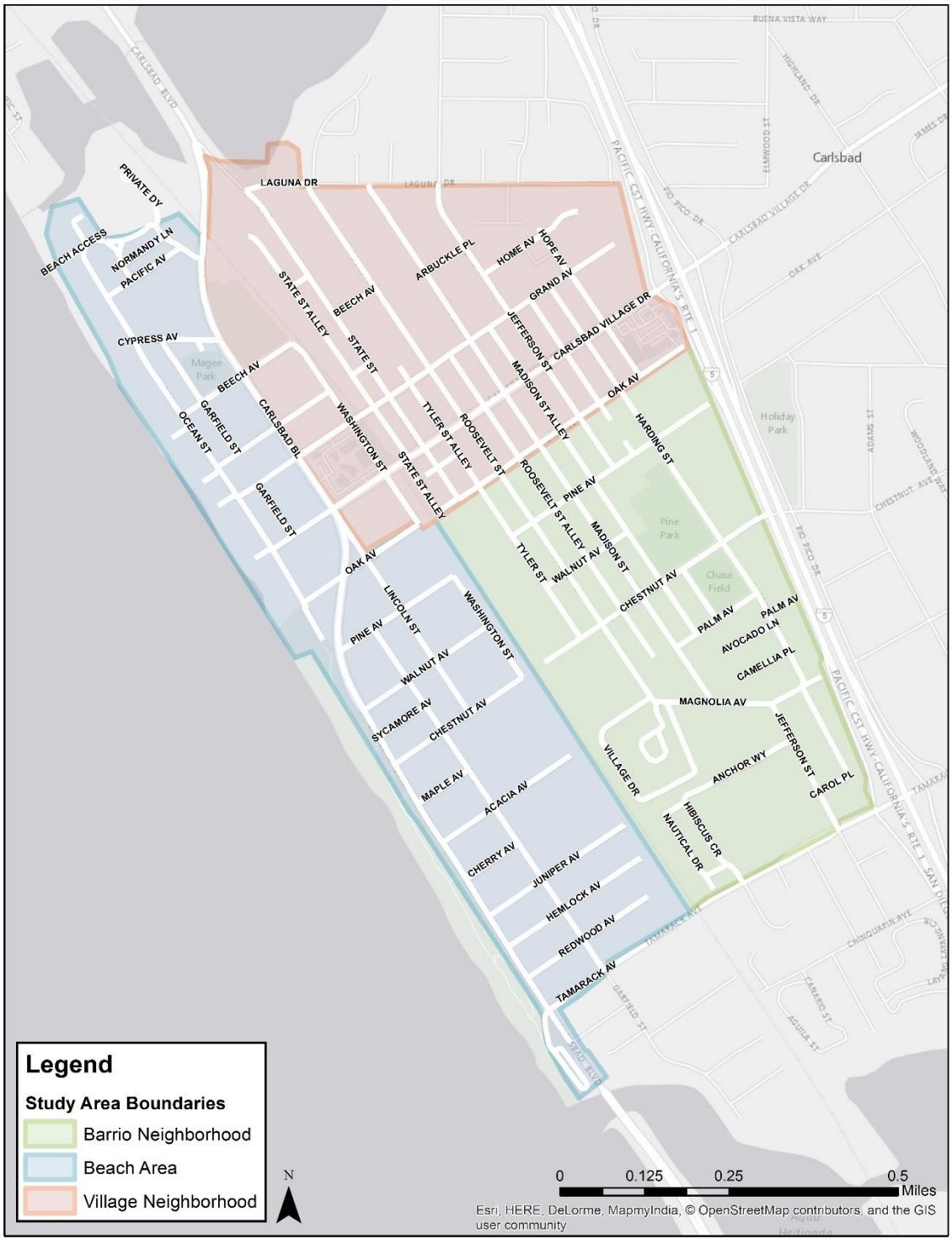
Included in this technical memorandum is a summary of the following:

- Summary of on-site survey efforts, analysis, and results
- Summary of online survey analysis and results
- Parking behavior data collection process, analysis, and results

This document concludes by summarizing the data and presenting key findings that will help to guide the identification of appropriate parking strategies for the study area.

Figure 1 depicts the study area.

Figure 1: Study Area



Existing Regulations and Management Practices

In addition to collecting data on parking behaviors and input from the users, an analysis of existing plans, parking restrictions, and regulations listed in the Carlsbad Municipal Code was conducted. A review of these materials provides an understanding of the City's current management practices and lays the ground work for developing recommendations and strategies that will improve parking in the Village, Barrio and Beach Area.

Throughout the study area, there are streets where parking is limited to two or three hours, and is enforced from 7 a.m.–6 p.m., Monday–Saturday (except holidays). Certain streets restrict parking between 2 a.m. and 5 a.m. or 3 a.m. and 5 a.m. to allow for street sweeping. Additionally, vehicles are restricted from parking in any space for longer than 72 consecutive hours. Any vehicle not driven more than one-tenth of a mile from its original position every 72 hours is subject to citation or towing at the owner's expense. Recreational vehicles (RVs) may park on public streets if they have the proper permitting; trailers must remain attached to a vehicle. **Figure 2** on the following page shows streets where parking is prohibited, or where there are time limits in place for parking. The restrictions show on Figure 2 are those that are noted in the City's Municipal Code. There are other street restrictions that are not shown on the map that are in place at the discretion of the City.

The overnight parking regulations were implemented to address concerns regarding the parking of RVs on the street. The City of Carlsbad ordinance (CS-204) states that a person cannot park their RV in their front yard. Therefore, people park their RV on the street. This is also not allowed per the ordinance and overnight parking is restricted on many streets to discourage RV parking overnight. The fine for parking an RV on-street is $50. Citizens can apply for a free oversize vehicle permit that will allow them to park overnight for a period of 72 hours. However, the public has voiced that the presence of RVs on the street is still an issue. It is apparent that although these regulations are in place, the lack of enforcement of them has allowed the continued use of on-street spaces by RVs.

Although there are parking restrictions in place to manage the on-street spaces, frequent comments from the public and City indicated that enforcement practices were not conducted regularly. As a result, the parking system within the study area is not functioning as intended to help balance the demands and create available spaces. Establishing practices, strategies, and regulations is only one component of creating a successful parking system. The other component is ensuring that those regulations are enforced. Proper enforcement upholds the regulations and ensures that the system operates effectively and efficiently.

Figure 2: Existing Study Area Parking Restrictions (as noted in the Municipal Code)

On-Site Survey Process and Analysis

As part of this Parking Study, on-site surveys were collected to solicit input from community citizens and visitors with regard to their parking behaviors within the study area. The goal of the survey was to collect information on parking behaviors, such as where and why people parked and how they traveled to the area. The survey was offered in both English and Spanish. Copies of the survey questions, both English and Spanish, are provided in **Appendix A**. Additionally, a complete set of responses for all of the surveys collected are provided in **Appendix B**.

On-site surveys were conducted over eight days – four days in May and four days in June – during weekday and weekend evening and morning time periods. Wednesdays were chosen to perform the surveys to coincide with the Farmer's Market that occurs weekly on that day. However, other dates were chosen to avoid events in the study area so that the responses would represent behaviors on typical weekdays and weekends.

The on-site surveys were conducted by a team of 12 professional surveyors positioned at eight locations throughout the Barrio, Village, and Beach areas. Each surveyor was equipped with an iPad, which were used to collect responses. The use of iPads allowed for streamlined analysis of the data received. In May, a total of 1,282 people participated in the on-site survey. An additional 971 people were approached but declined to take the survey. In June, a total of 857 people participated in the on-site survey. An additional 660 people were approached but declined to take the survey.

Table 1 and **Table 2** present the specific dates, times, and locations the on-site surveys were conducted, as well as the number of surveys collected at each site on each day.

Table 1: May On-Site Survey Locations, Dates, Times, and Number of Surveys Collected

LOCATION		SAT 5/14	WED 5/18	SAT 5/21	WED 5/25
		3PM - 7PM	10AM - 2PM	10AM - 2PM	3PM - 7PM
Beach	1. Ocean Street & Carlsbad Village Drive (CVD) at the beach entrance	79	29	78	
Beach	2. Area to the south of Ocean Street and west of Carlsbad Boulevard (CB)	55	63	98	
Beach	3. Tamarack Avenue and CB	67	106	96	
Village	4. Christiansen Way, west of State Street	54			88
Village	5. CVD & State Street		70		127
Village	6. CVD & CB	34	68		72
Barrio	7. SW corner of Pine Avenue & Harding Street			17	23
Barrio	8. NW corner of Chestnut Avenue & Harding Street			27	31

Indicates that location was not collected on that date and time

The demographic of respondents was similar between May and June, with half of the respondents being male and the other half female in both months.

Table 2: June On-Site Survey Locations, Dates, Times, and Number of Surveys Collected

LOCATIONS		WED 6/15	SAT 6/18	WED 6/22	SAT 6/25
		10AM - 2PM	10AM - 2PM	3PM - 7PM	3PM - 7PM
Beach	1. Ocean Street & Carlsbad Village Drive (CVD) at the beach entrance	17	56		21
Beach	2. Area to the south of Ocean Street and west of Carlsbad Boulevard (CB)	58	79		30
Beach	3. Tamarack Avenue and CB	39	108		57
Village	4. Christiansen Way, west of State Street			45	44
Village	5. CVD & State Street	46		69	
Village	6. CVD & CB			60	58
Barrio	7. NE corner of the intersection of Roosevelt St. and Walnut Ave.		26	5	
Barrio	7A. Between Oak Ave. & Pine Ave.			3	
Barrio	8. NW corner of Chestnut Avenue & Harding Street		17	19	

Indicates that location was not collected on that date and time

The following sections present the survey findings for the Village, Barrio, and Beach areas. It should be noted that input from this survey should be considered in a similar way to input received during public comment at a City Council meeting, remarks at a public workshop, or comments provided via email to City staff. Due to the way survey participants were identified, the survey sample may not be representative of all project stakeholders. As a result, unlike a scientific study, the responses cannot be generalized to the larger population with a known margin of error.

On-Site Survey Summary for the Carlsbad Village Locations

The survey responses for both May and June were fairly consistent for all survey questions. The following is a summary of responses given by those surveyed in the Carlsbad Village. A full analysis of the survey responses is provided in **Appendix B**.

- Carlsbad Village: Reasons for visiting the Village varied. During the weekend, dining received the most responses for visiting the Village (27% May; 20% June). On a weekday, shopping received the most responses (19% May; 16% June). A full breakdown of why people were visiting the Carlsbad Village is presented in **Figure 3** and **Figure 4** below.
- The majority of respondents stated that they drove alone in a car during the weekday surveys (61% in May and 52% in June). On weekends, respondents drove more frequently with others (57% in May and 54% in June).
- In May, 47% of respondents answered that they parked in a parking lot during weekday surveys, while 34% parked on-street. During the weekend, 49% answered that they parked on-street, while 45% responded that they parked in lots.
- In June, 44% of respondents answered that they parked on-street during weekdays, while 38% utilized parking lots. During weekend surveys, 34% of respondents indicated they parked in parking lots and on-street respectively.
- Respondents answered that it took them less than two minutes to park during both weekday and weekend surveys (May – 63% weekday and 70% weekend; June – 57% weekday and 44% weekend).
- On average, nearly 60% of respondents answered that they parked directly in front of their destination or one block away.

Figure 3: Village - What Brings You Here Today? (May)

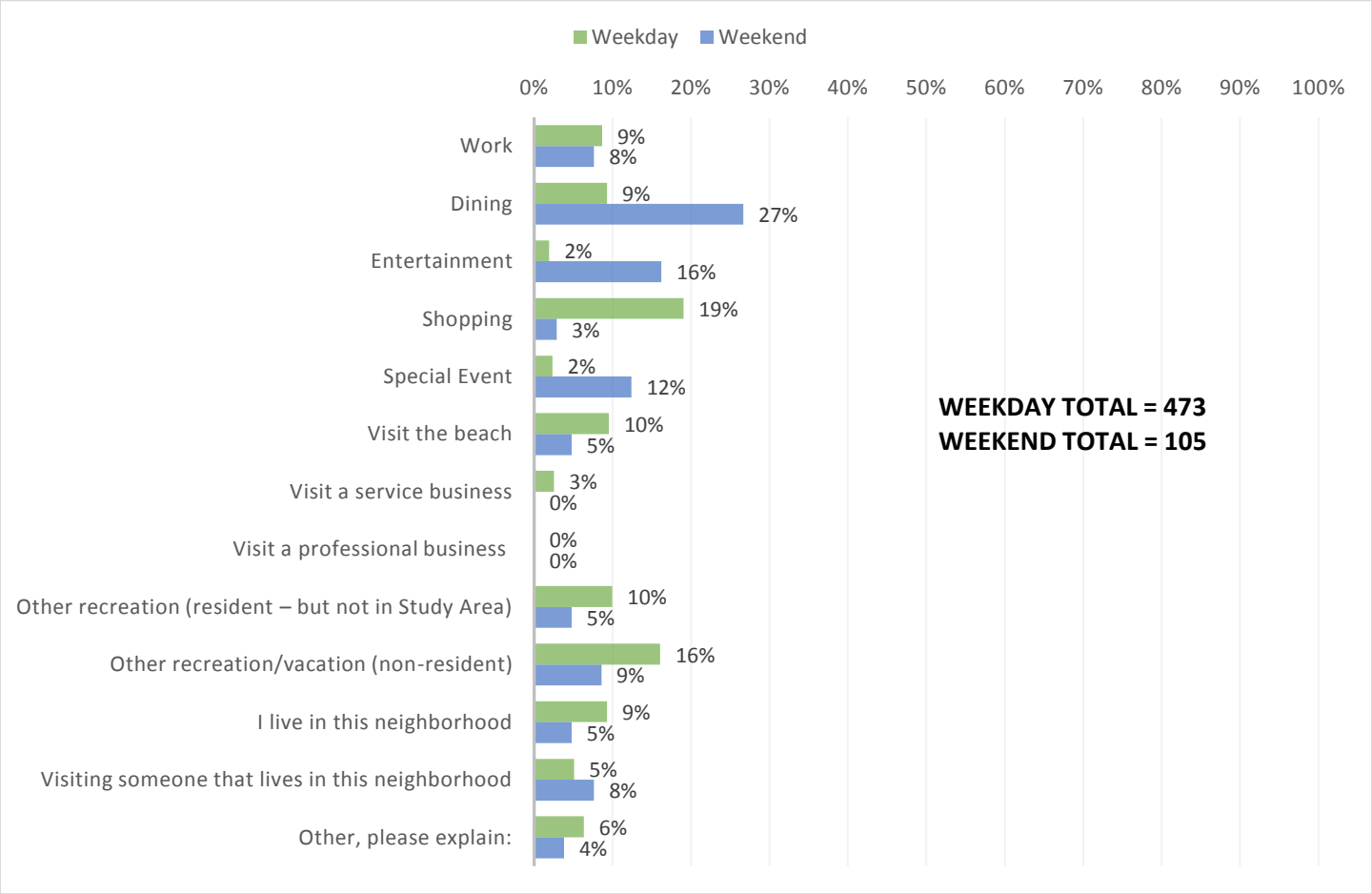
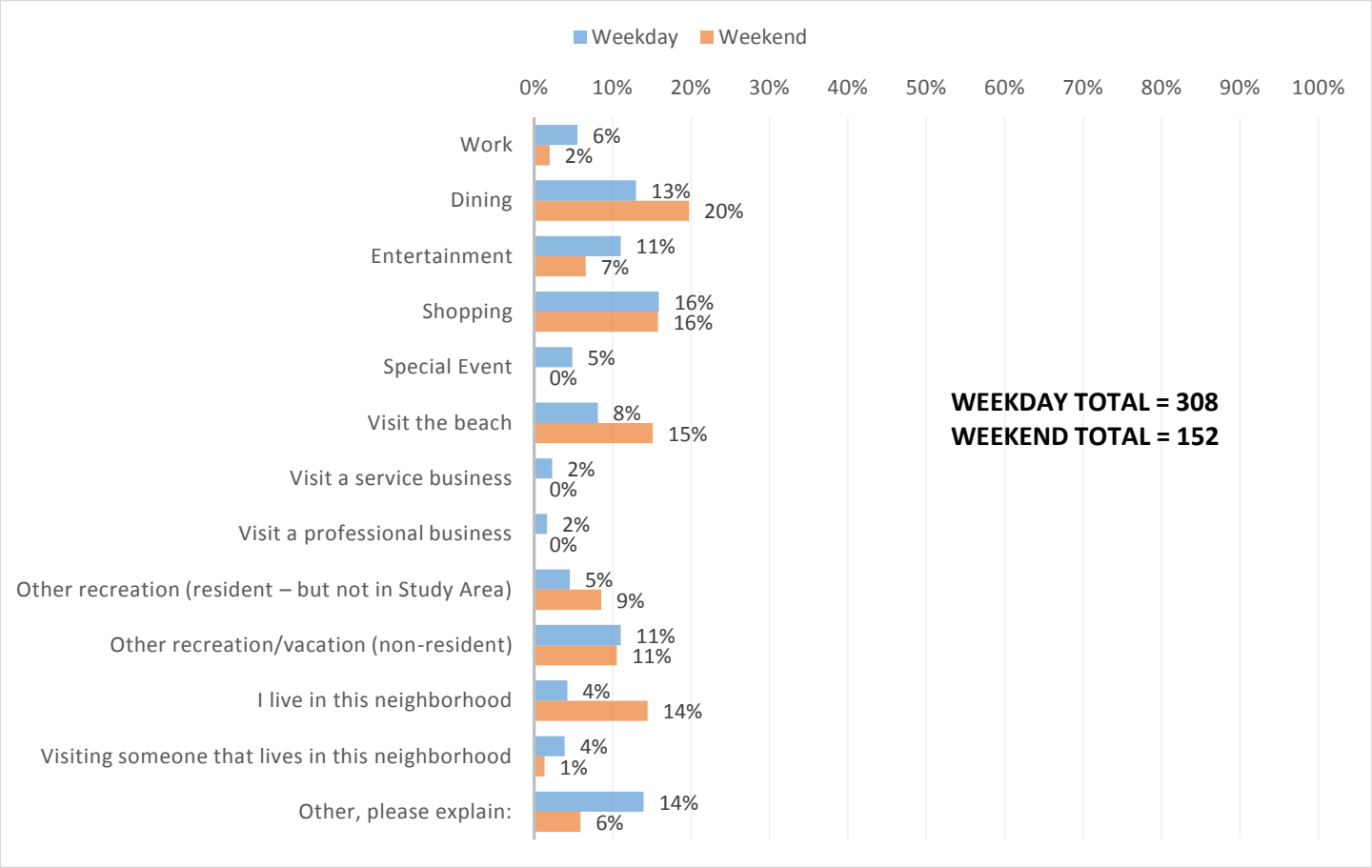


Figure 4: Village - What Brings You Here Today? (June)

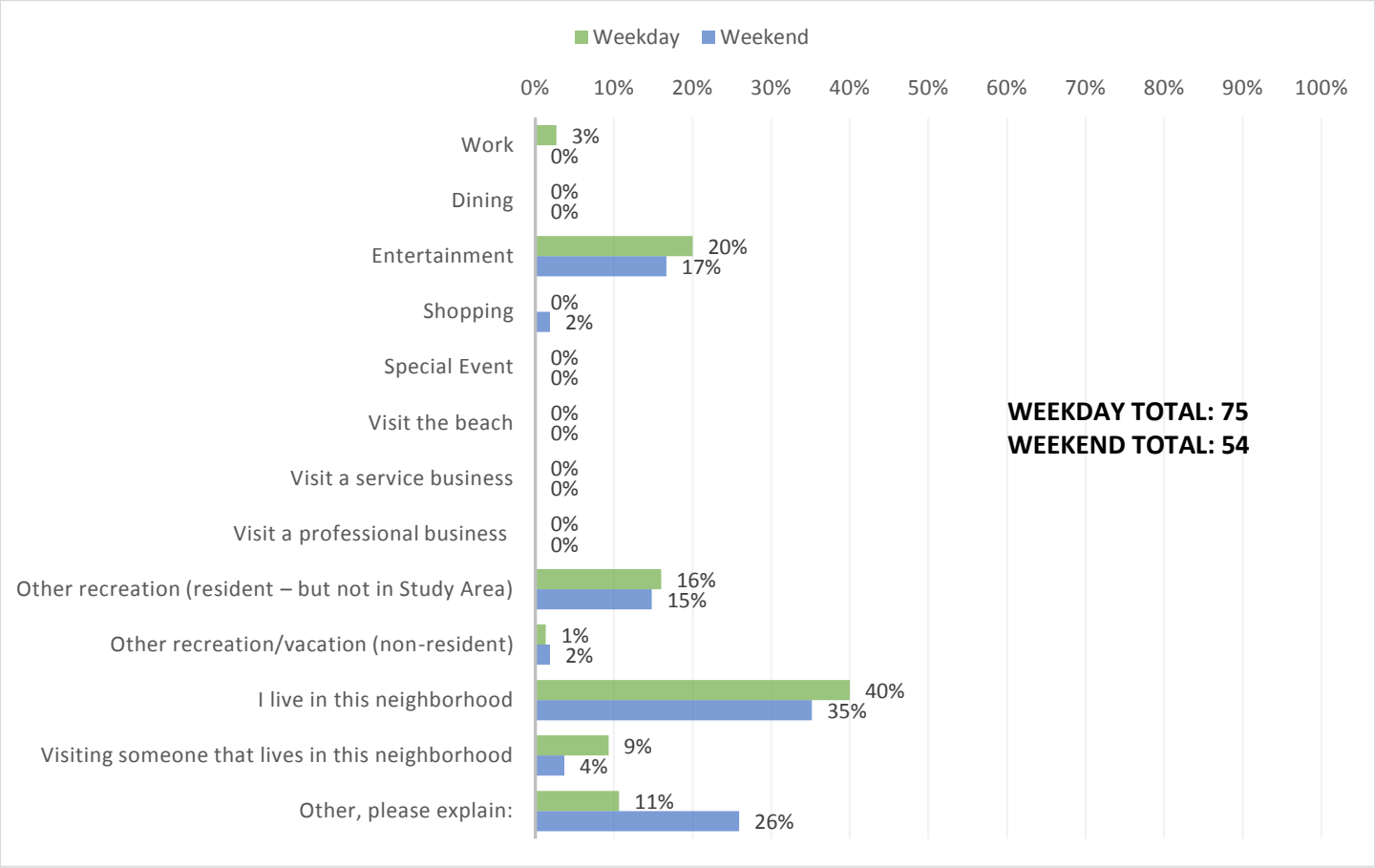


On-Site Survey Summary for the Barrio Neighborhood Locations

The survey responses were less consistent between May and June in the Barrio Neighborhood than they were for the Village. This could be attributed to the residential nature of the area, and during the peak season of June it attracts users from outside the area that utilize the parking facilities within the Barrio. The following is a summary of responses given by those surveyed in the Barrio Neighborhood. A full analysis of the survey responses is provided in **Appendix B**.

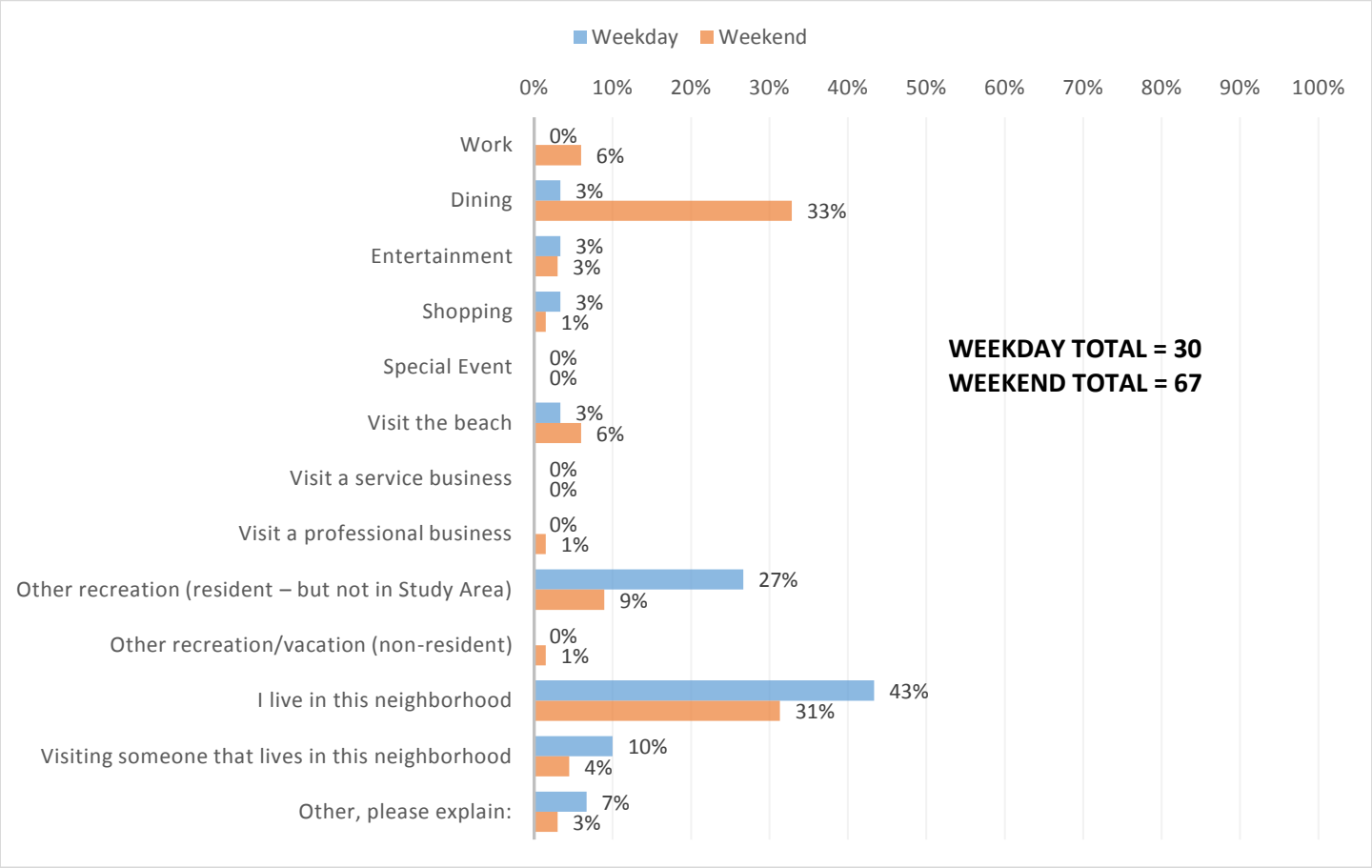
- In May, the highest response received of those in the Barrio Neighborhood was that participants were area residents (38% May average of weekday and weekend). In June, this was true for the weekday (43% of respondents stating they were area residents), however, dining received more responses for the weekend (33%). A full breakdown of why people were visiting the Barrio Neighborhood can be seen in **Figure 5** and **Figure 6** below.
- On average, 43% of respondents stated that they traveled to the area by walking. However, in June, 41% stated they drove either alone or with others. The higher levels of pedestrian activity could be attributed to the fact that the majority of survey participants stated that they lived in the Barrio and were not visiting from outside the area, allowing them to walk to their destinations.
- In June, the majority of respondents during both weekday (100%) and weekend (87%) surveys answered that they parked on-street.
- With regard to how long it took respondents to find parking, 49% answered “non-applicable” because their mode of travel for that particular trip was walking. Of those that did drive, 23% in May stated that it took people less than two minutes to find parking.
- For June, 70% stated that they were able to find parking in less than two minutes. The responses indicate that those who do drive to the area are able to find parking promptly upon arrival.
- With regard to how far participants parked from their destination, the most popular response for May weekday was that people parked one block away from their destination (34%). During weekend surveys, the most popular response was “non-applicable” (41%), with 34% of respondents finding parking directly in front of their destination. For June, the majority of respondents answered that they parked directly in front of their destination during both weekday (65%) and weekend (70%) surveys.

Figure 5: Barrio - What Brings You Here Today? (May)



Of those who responded as "Other", the responses were mainly walking the dog and exercising.

Figure 6: Barrio - What Brings You Here Today? (June)



On-Site Survey Summary for the Beach Area Locations

The survey responses for both May and June were fairly consistent in the Beach area. The following is a summary of responses given by those surveyed in the area. A full analysis of the survey responses is provided in **Appendix B**.

- Visiting the beach received the highest response from survey respondents during the weekend and weekday in both May and June (48% May average of weekday and weekend; 50% June average of weekday and weekend). A full breakdown of why people were visiting the Beach area is shown in **Figure 7** and **Figure 8** below.
- On the weekday, most participants in this area stated that they drove alone (49% average). On weekends, however, 53% stated that they drove with others.
- On average, 54% of respondents stated that they parked on the street.
- On average, 58% of respondents answered that it took them less than two minutes to park, and 48% stated that they parked directly at their destination.

Figure 7: Beach Area - What Brings You Here Today? (May)

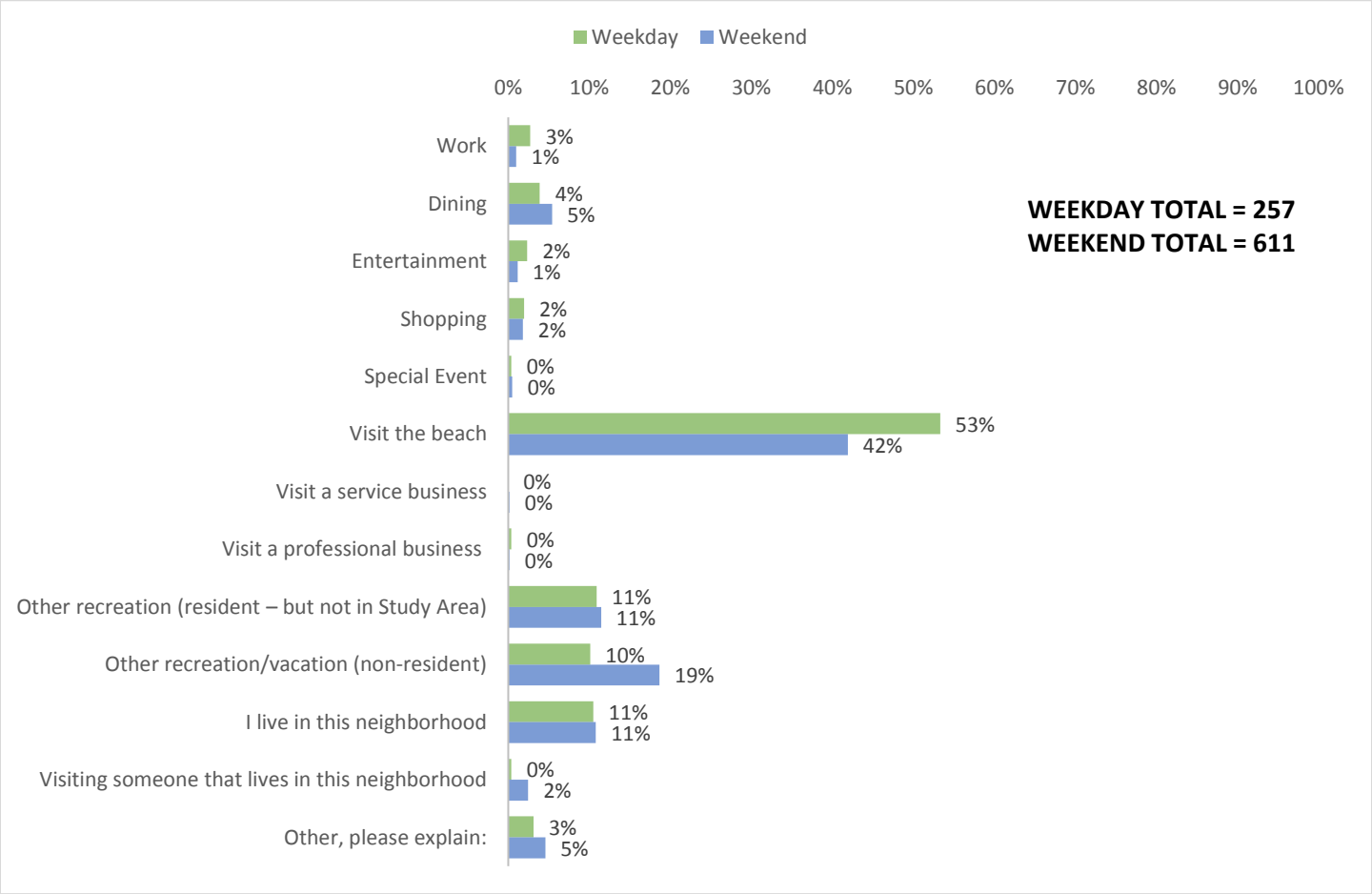
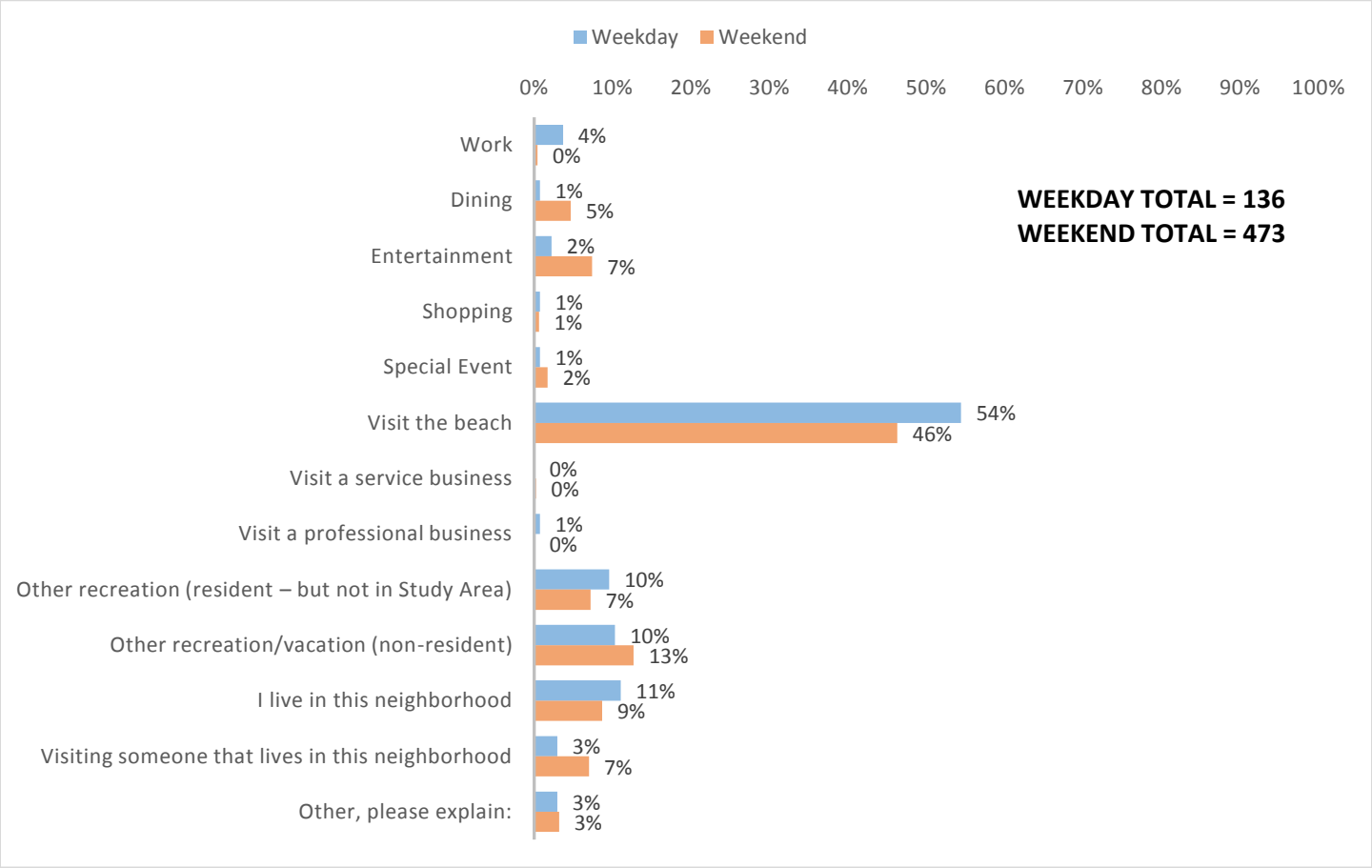


Figure 8: Beach Area - What Brings You Here Today? (June)



Overall, the results of the on-site surveys indicate that users coming to the study area are able to find parking relatively quickly (within two minutes) and near their destination (within two blocks). Analyzing this data alone would indicate that there are no parking capacity issues with the study area. However, as stated previously, the intent of the on-site survey was to analyze user behaviors during a snapshot in time. The limitation of this data is that the survey did not reach a wide range of people and it was limited to those who happened to be walking by on those days at that time. Although this information provides insight to how people are using the system, the data must be looked at in conjunction with the responses of the online survey and the parking data collected in the field.

Online Survey Analysis

An online survey was created, in both English and Spanish, to capture opinions and feedback from a broader range of users than those who were able to participate in the on-site survey. While the on-site surveys captured parking and travel behaviors for specific days (weekday and weekend, shoulder and peak season), the online survey is able to reach more people with the purpose of determining general parking behaviors and to identify issues within the parking system from various user perspectives. The survey was designed so that perspectives were gained from residents, visitors, employees, and business owners. The survey questions, in both English and Spanish, are provided in **Appendix C**.

The online survey was posted on May 9, 2016 and closed on August 31, 2016. At the time the survey was closed, 825 responses to the survey were collected. The link to the survey was distributed through the City's website, e-newsletters, social media announcements, and community group meetings. Additionally, during the on-site surveys, surveyors distributed business cards with links to the survey. These cards were also left at businesses and community centers within the study area willing to place them on display for patrons to take.

This section presents the preliminary results from the survey. All of the responses to the survey for all user types is included in **Appendix D**.

The survey was developed so that participants could identify themselves as either a business owner, employee, resident, or visitor. Even though each user type was asked similar questions, the intent of identifying the user type was to be able to differentiate the responses. **Table 3** lists the number of respondents that took the survey for each user type.

*Table 3: Online Survey Responses by User Type**

USER TYPE	RESPONDENTS
Business Owners	70
Employees	104
Residents	296
Visitors	355

*One Spanish language survey was received

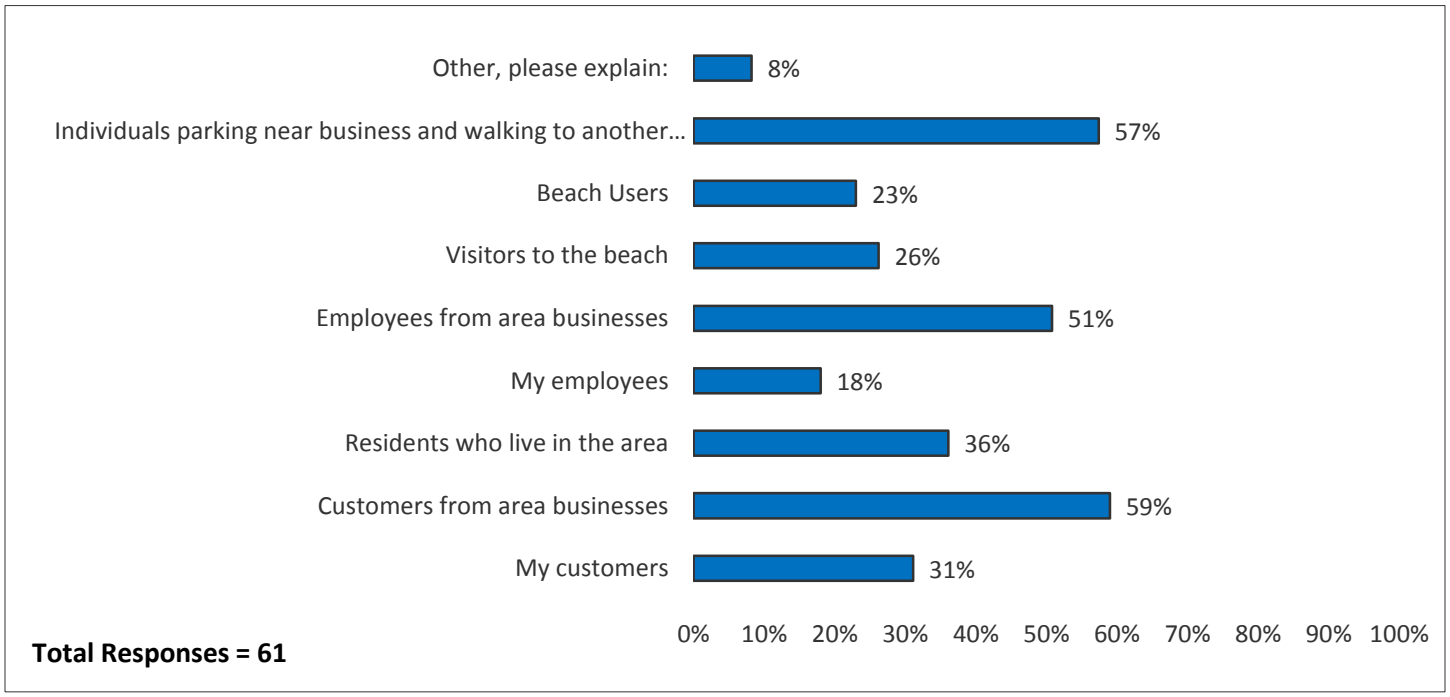
The following sections summarize the analysis results of the online survey for each of the user types.

Business Owner Responses

Business owners are those who own or manage a business in the study area. Parking needs for this group focus on available parking for their customers within what respondents deemed to be an appropriate walking distance of their business. The following is a summary of responses given by online survey participants indicating that they own or manage a business within the study area.

- Of the online survey respondents indicating they own or manage a business in the study area, 84% own or manage a business in the Carlsbad Village.
- 54% of participants stated that they do not provide parking for their employees.
- With regard to defining a reasonable parking distance, the answer that received the most responses was a distance of less than one block (41%).
- 59% of business owners or managers believe that the on-street parking near their business is typically being utilized by customers from area businesses, and 57% believe individuals are parking near their business and walking to another location.
- 51% of business owners or managers believe the on-street parking closest to their business is being utilized by employees from area businesses. A full breakdown of who business owners or managers believe is utilizing the parking closest to their business can be found in **Figure 9**.

Figure 9: Who do you think is parking in the on-street parking spaces closest to your business? (Check all that apply)

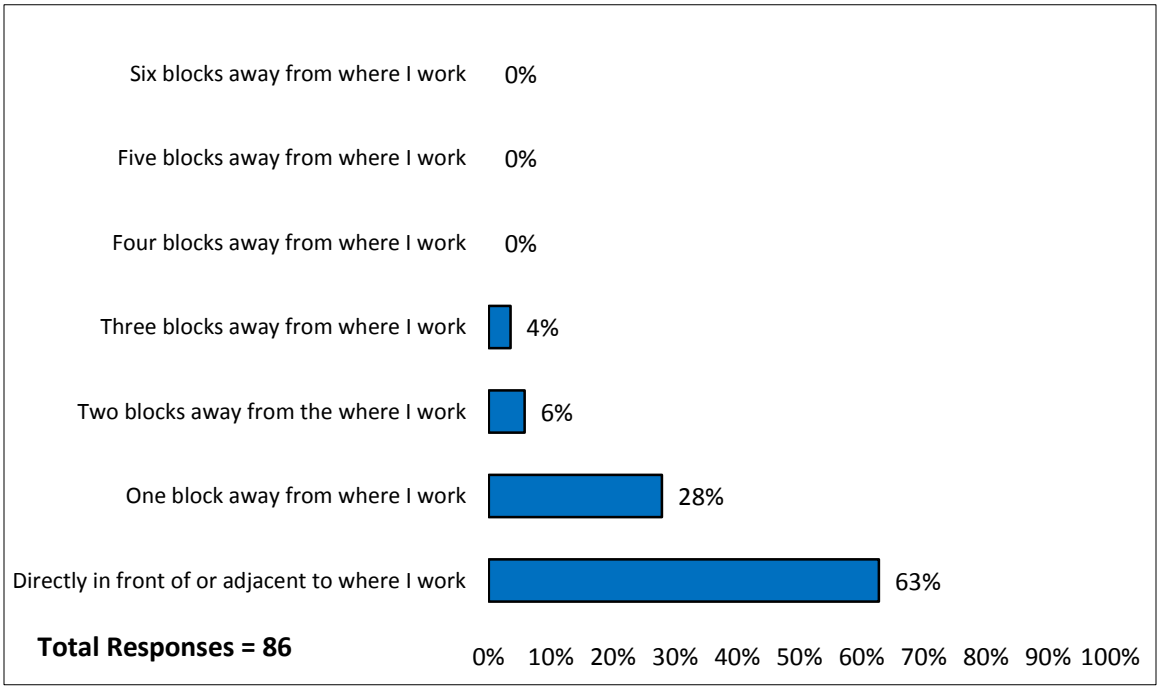


Employee Responses

Parking needs for employees working in businesses in the study area focus on the ability to park near their place of employment (typically within 1-2 blocks) but also being able to park long-term. The following is a summary of responses given by online survey participants indicating that they are employed in the study area.

- The majority of respondents (67%) employed in the study area work in the Carlsbad Village area.
- The vast majority of respondents (82%) employed in the study area drive alone in a car to get to work.
- 53% indicated that they are able to find parking within two minutes.
- 52% of respondents say they usually park in a parking lot. 26% stated they park in on-street spaces in Carlsbad Village.
- Most employees participating in the survey (63%) indicated that they usually park directly in front of or adjacent to where they work. A full breakdown of how close respondents usually park to their place of business is presented in **Figure 10**. However, business owners or managers indicated that they believe only 18% of vehicles utilizing the spaces closest to their business are their employees. This indicates that there may be some lack of knowledge regarding which user groups use the spaces.

Figure 10: How close to work do you usually park?



Employee users and patrons often compete over available parking near businesses. Taking into consideration the responses from the business owners, designated employee parking is typically not provided throughout

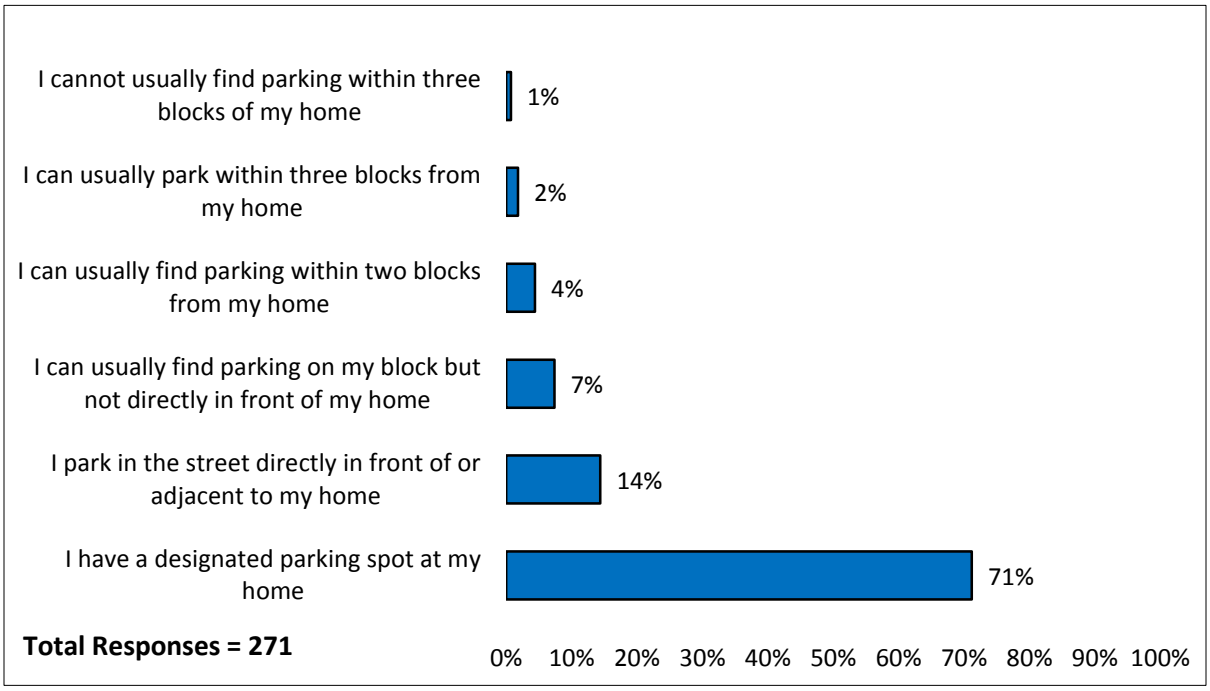
the study area and therefore employees are able to park as close as they are able to their destination. Whether these spaces are in a lot or on-street, it is encouraged that the spaces directly in front of or adjacent to a business should remain available for customers in order to improve access to the businesses.

Resident Responses

Residents are those who live within the boundaries of the study area. Parking needs for this group typically focus on availability of spaces near their residence for themselves and their guests. The following is a summary of responses given by online survey participants indicating that they live in the study area.

- The most frequent response (47%) of online survey respondents live near the beach, while 39% live in the Carlsbad Village.
- The vast majority of respondents (71%) indicated that they park either in a driveway or a garage on their property. A full breakdown of how close residents are able to park to their home can be seen in **Figure 11**.
- Since most participants have designated parking, most (78%) are able to find parking in less than five minutes.
- 47% of respondents stated that they are usually able to find a parking spot in less than two minutes.

Figure 11: How close to your home do you usually park?

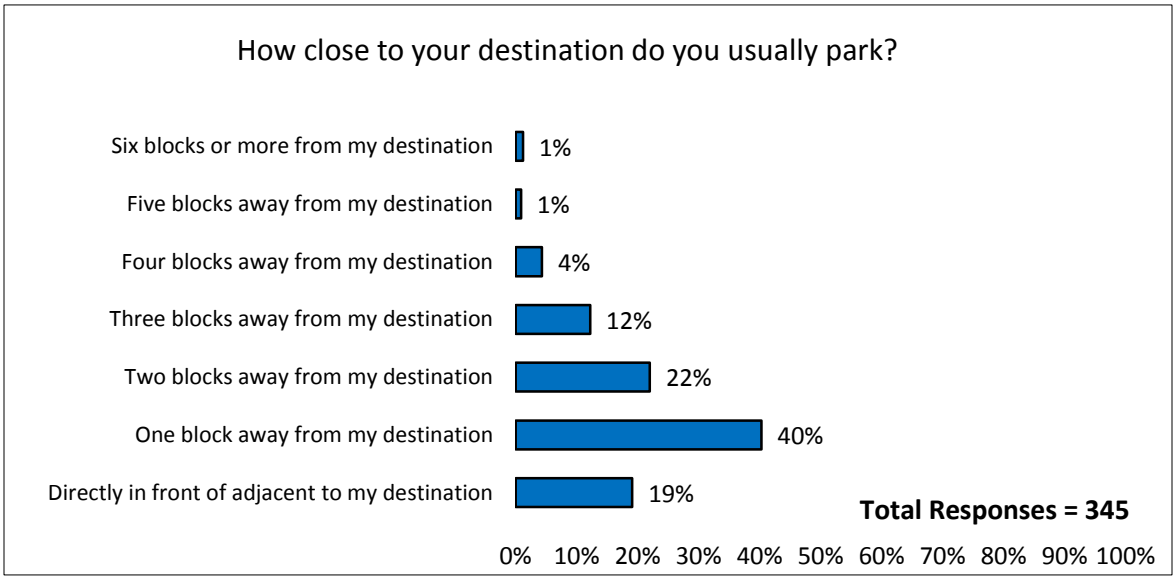


Visitor Responses

The following is a summary of responses given by online survey participants indicating that they visit the study area. For the purposes of this study, a visitor is someone who lives outside of the study area. Visitors experience the parking system different from other users, and their responses can provide insight into gaps in the parking system that a frequent user – such as a resident, employee, or business owner – may not experience due to their familiarity with the system.

- 72% of respondents indicated that they visit the Carlsbad Village area.
- The vast majority of respondents travel by car when visiting the study area. Of those indicating that they visit the study area, 50% drive alone, while 39% drive with others.
- When visiting the study area, 43% of the respondents indicated that they park on the street in the Carlsbad Village and 28% of respondents indicated that they use parking lots when visiting the study area.
- 44% of respondents indicated that it takes 2-5 minutes to find an available parking space, while 31% are able to park in less than two minutes.
- Respondents are typically parking within close proximity to their destination when visiting the study area. 40% of respondents indicated that they park one block away from their destination when traveling to the community, 22% said they usually park two blocks away from their destination, and 19% park directly in front of or adjacent to their destination. A full breakdown of how close respondents park to their destination is presented in **Figure 12**.

Figure 12: How close to your destination do you usually park?

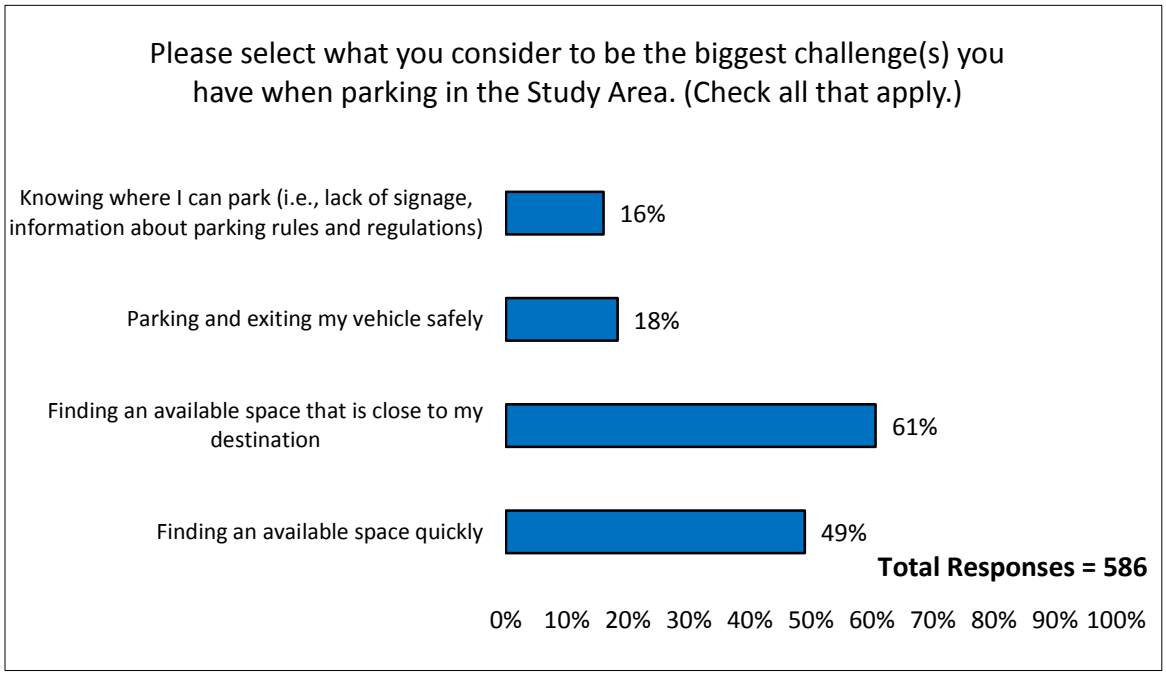


All User Responses

The following is a summary of responses given by online survey participants indicating that they visit the study area.

- The majority (61%) of respondents consider finding an available space close to their destination to be the greatest challenge when parking in the study area.
- 49% consider the biggest challenge to be finding an available space quickly. A full breakdown of what respondents consider to be the biggest challenges when parking in the study area can be seen in **Figure 13**. Even though participants indicated that they were able to find parking close to their destination in a short amount of time, as indicated in the user type analyses, users feel that there are issues finding available spaces.
- The age group with the highest response rate (29%) are between the ages of 50 and 59 years old.
- 62% of respondents indicated that they are female, while 38% are male.

Figure 13: Please select what you consider to be the biggest challenge(s) you have when parking in the Study Area. (Check all that apply.)



The 340 free response comments on the survey revealed that many respondents believe the parking situation in the study area is adequate and they do not desire any changes. Common themes among the general comments provided by respondents from all user groups include the following:

- The parking situation in the study area is adequate and they do not desire any changes.
- Paid parking is not desirable.
- Off-street parking that is centralized between the Village and Beach areas was recommended.
- Enforcing time limits was recommended.

Many of the comments reiterated the point that the main issue with the parking system is finding available parking near destinations. The parking analysis, discussed in the next section, is able to provide insight into the parking behaviors in the study area to explain where these problem areas may be occurring. All free response comments are provided in **Appendix D**.

Parking Analysis

Parking occupancy data was collected during the off-peak season and peak season using License Plate Recognition (LPR) technology, which allows for an automated processing of the parking data. The intent of this data collection effort was to determine occupancies within the study area during the morning, mid-day, and evening peaks. Off-street and on-street parking facilities were collected in the study area. These facilities are shown in **Figure 14**.

The existing inventory by facility type in the Study Area is as shown below. The North County Transit District (NCTD) lot was evaluated separately from the other off-street facilities because there are signs around the lot that restrict its usage to transit users only.

- On-Street: 4,971 spaces
- Public Off-Street: 730 spaces
- NCTD Transit Lot: 511 spaces
- Private Off-Street: 5,445 spaces
- Single Family Homes: 567 spaces (this value is based on the number of driveways observed in the study area)

Data Collection Methodology

The mobile LPR equipment uses a dual camera configuration, placed on the roof of the data collection vehicle. The vehicle drives continuous loops through each collection area, counting the number of vehicles parked on-street. The intent of this effort was to count the number of parked vehicles in the area in order to determine parking occupancy and duration behaviors. Off-peak seasonal data was collected on Thursday, May 19th and Saturday, May 21st between 6 a.m. and 9 p.m. Peak season data was collected at the same locations in the same manner in July as it was conducted in May. However, upon receiving feedback from citizens raising concerns about adequately capturing the residential demand, it was decided to extend the data collection period in July and do another run later in the evening. For July, parking data was collected on Thursday, July 14th and Saturday, July 16th to obtain representative peak season parking conditions.

For the purposes of this analysis, LPR technology was used to take reads on license plates along curb faces to determine occupancy and parking behavior. The data received from the LPR unit was limited to a license plate number, the time stamp the read was taken, and a GPS location. The license plate number was used to create a unique identifier for each vehicle observed, which was assigned to each read, replacing the license plate number.

Using the LPR data, parking occupancy and duration data for the morning, mid-day, evening, and late night (July only) peak periods were able to be obtained and analyzed for the on-street and off-street facilities in the study area. The following sections summarize the results of the data collection efforts conducted in May and July.

Figure 14: Parking Inventory

Parking Occupancy Analysis

When analyzing parking occupancy, it is important to understand that the primary industry accepted threshold for identifying demand constraints for a system is when occupancies reach 85-90% consistently. When occupancies for a parking system reach this level of occupancy, parking efficiency starts to deteriorate and changes need to be implemented in order to maintain efficiency of the system. The 10-15% remaining capacity accounts for those vehicles leaving a space and the few spaces that are scattered throughout the system or a facility that one might have to circle to find.

However, it is important to note that this level of occupancy does not necessarily have to happen across the entire system for users to experience frustrations. When facilities with the highest demand are consistently full, the perception of parking can deteriorate throughout the entire study area. This deterioration is often the cause of poor public perception of the parking system or patron frustration.

Using this industry standard, the parking occupancy within the study area was evaluated for on-street and off-street facilities on the days that data was collected in May and July. Note that parking occupancies for single family homes were included in this analysis. These occupancies were included in the parking occupancies for the overall study area, but have no impact on the availability of public parking. The following sections summarize the occupancy analysis for the on-street and off-street parking, including single family homes, within the study area.

May 2016 Analysis

Data collected in May represents the off-season peak demands. The following are the average occupancies for the entire system on the days that data was collected in May:

- Weekday Peak Parking Occupancy: 46% (1 p.m.)
- Weekend Peak Parking Occupancy: 49% (9 a.m.)

In May, the peak was during the weekend at 9 a.m. During this period, the following occupancies were observed by parking type:

- On-street: 50% occupied
- Public Lots: 24% occupied
- NCTD Transit Lot: 21% occupied
- Private Lots: 32% occupied

The section on page 44 of this document examines the peak period parking occupancies of the facilities that are available to the public, on-street and public off-street facilities.

The data indicates that during the week, the Carlsbad Village experiences a greater change in occupancies than the Beach and Barrio neighborhoods. This type of parking behavior can be expected due to the employment-based land uses that are prevalent in the Village. The Barrio and Beach areas are mostly comprised of residential land uses, creating less varied occupancy trends throughout the day.

Unlike the weekday, the weekend occupancies in May are relatively stable throughout the day, especially in the Beach area. This is likely due to users coming into the area and staying for longer periods of time than they typically would during a weekday, thus creating less of a variance in the parking occupancy throughout the day. It should also be noted that occupancies for the Beach area are nearly 10% higher on the weekends than they are during the weekday.

A breakdown of observed occupancy by neighborhood throughout the day can be seen in **Figure 15** and **Figure 16**.

Figure 15: May Weekday Parking Occupancy by Neighborhood

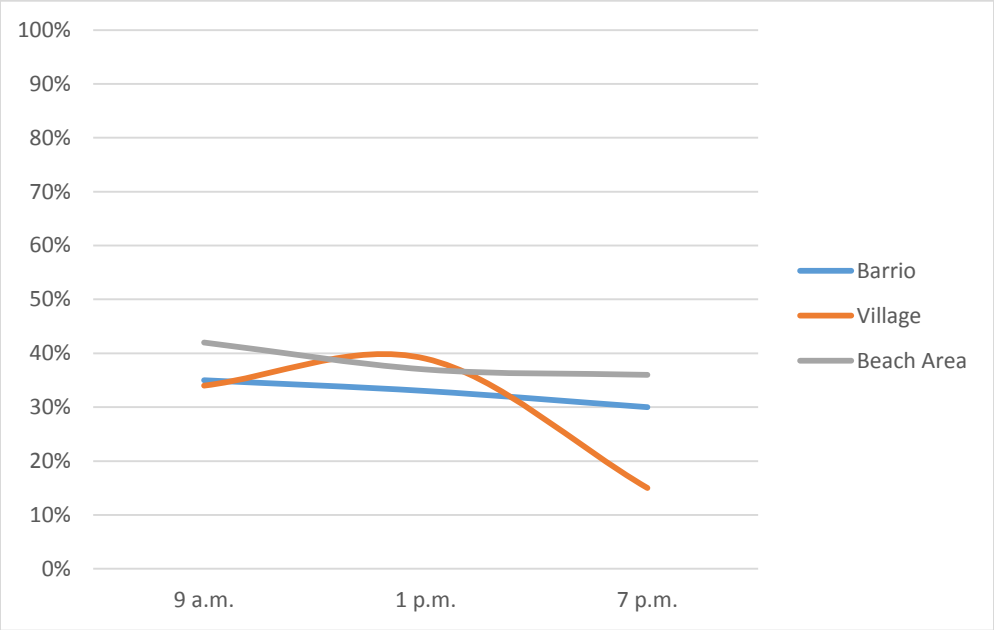
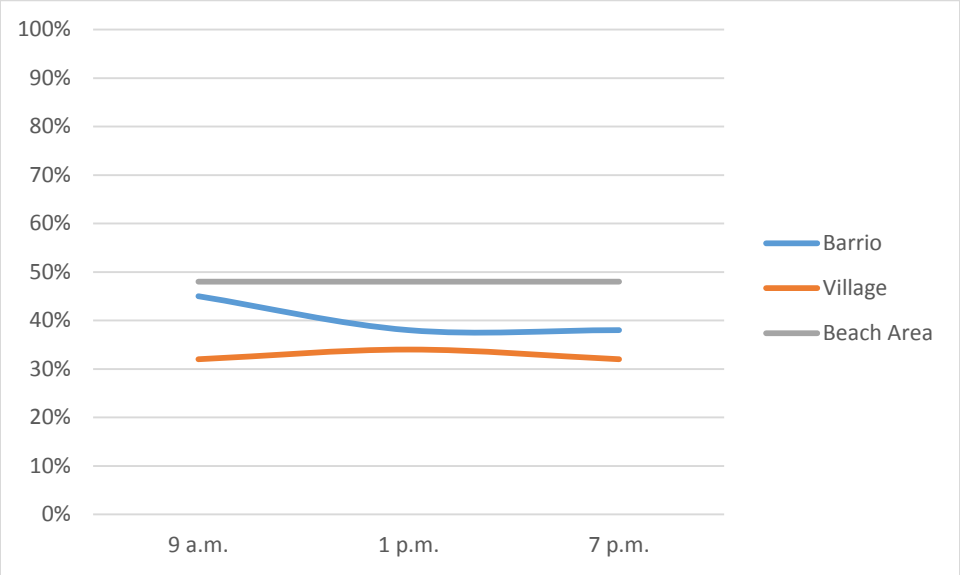


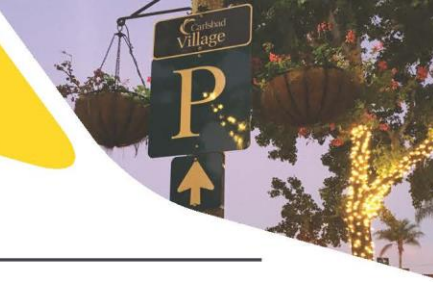
Figure 16: May Weekend Parking Occupancy by Neighborhood



During the May data collection period, greater occupancies were observed across all facility types during the weekend as compared to the weekday peak hour. **Table 4** compares the parking occupancies by facility type throughout the study area. **Figure 17** and **Figure 18** on the following pages illustrate the parking occupancies throughout the study area during the weekday peak hour (1 p.m.) and weekend peak hour (9 a.m.). It should be noted that the occupancy maps illustrate the blocks where parked vehicles were observed, regardless of signed parking restrictions.

Table 4: May Weekday and Weekend Parking Occupancies by Facility Type

PARKING TYPE	TOTAL SPACES	DAY OF WEEK	MORNING (9 a.m.)	AFTERNOON (1 p.m.)	EVENING (7 p.m.)
On-Street	4,971	Weekday	42%	42%	35%
		Weekend	50%	48%	46%
Public Off-Street	730	Weekday	35%	40%	26%
		Weekend	24%	62%	48%
NCTD Transit Lot	511	Weekday	54%	74%	19%
		Weekend	21%	39%	36%
Private Off-Street	5,445	Weekday	31%	31%	16%
		Weekend	32%	30%	31%
Single Family Homes	567	Weekday	82%	73%	93%
		Weekend	83%	73%	94%



Throughout the study area, the private parking experiences lower occupancies than the public parking facilities, nearly half the occupancy on the weekend. This distinction is further realized when observing the demands of each of the parking types by neighborhood. **Table 5** through **Table 7** compares the parking occupancies by facility type in each of the study area neighborhoods, Carlsbad Village, Barrio, and Beach Area.

Table 5: May Weekday and Weekend Parking Occupancies by Facility Type
Carlsbad Village

PARKING TYPE	TOTAL SPACES	DAY OF WEEK	MORNING (9 a.m.)	AFTERNOON (1 p.m.)	EVENING (7 p.m.)
On-Street	1,353	Weekday	39%	46%	19%
		Weekend	41%	41%	37%
Public Off-Street	274	Weekday	53%	70%	46%
		Weekend	64%	64%	61%
NCTD Transit Lot	511	Weekday	54%	74%	19%
		Weekend	21%	39%	36%
Private Off-Street	3,113	Weekday	31%	34%	12%
		Weekend	27%	29%	28%

Table 6: May Weekday and Weekend Parking Occupancies by Facility Type
Barrio Neighborhood

PARKING TYPE	TOTAL SPACES	DAY OF WEEK	MORNING (9 a.m.)	AFTERNOON (1 p.m.)	EVENING (7 p.m.)
On-Street	1,784	Weekday	40%	38%	38%
		Weekend	51%	44%	44%
Public Off-Street	252	Weekday	30%	22%	15%
		Weekend	24%	39%	6%
Private Off-Street	916	Weekday	24%	25%	14%
		Weekend	35%	25%	27%

Table 7: May Weekday and Weekend Parking Occupancies by Facility Type
Beach Area

PARKING TYPE	TOTAL SPACES	DAY OF WEEK	MORNING (9 a.m.)	AFTERNOON (1 p.m.)	EVENING (7 p.m.)
On-Street	1,834	Weekday	46%	43%	42%
		Weekend	41%	41%	37%
Public Off-Street	204	Weekday	32%	46%	25%
		Weekend	50%	56%	53%
Private Off-Street	1,416	Weekday	37%	28%	27%
		Weekend	27%	29%	28%

The Village contains the most public off-street parking in the study area and it experiences the highest occupancy for public off-street facilities (70% during the weekday afternoon), whereas the private facilities operate at only 34% for the same day and time period. The high demand for public parking in the Village can be attributed to the business and commercial land uses present in the Village that attract employees and visitors to the area that utilize public off-street parking. The high demand for public off-street parking in the Village can make finding available spaces close to destinations difficult for users, thus contributing to user frustrations with the parking system in the study area.

In contrast to the Village, the disparity between public and private off-street facility occupancy is less distinct in the Barrio Neighborhood. This is likely due to the fact that there are far fewer spaces of public parking available in the Barrio than private, but also because of the land uses that exist in the Barrio. The Barrio is mostly residential and not as commercial or business oriented as the Village, thus the demand for public parking is less.

Similar to the Village, the Beach area also experiences a drastic difference in demand between the public and private facilities. The private operates at nearly 30% whereas the public off-street facilities operate at 46% and 56% during the weekday and weekend respectively during the peak time period of 1 p.m.

Figure 17: May Weekday Peak Parking Occupancy (1 p.m.)

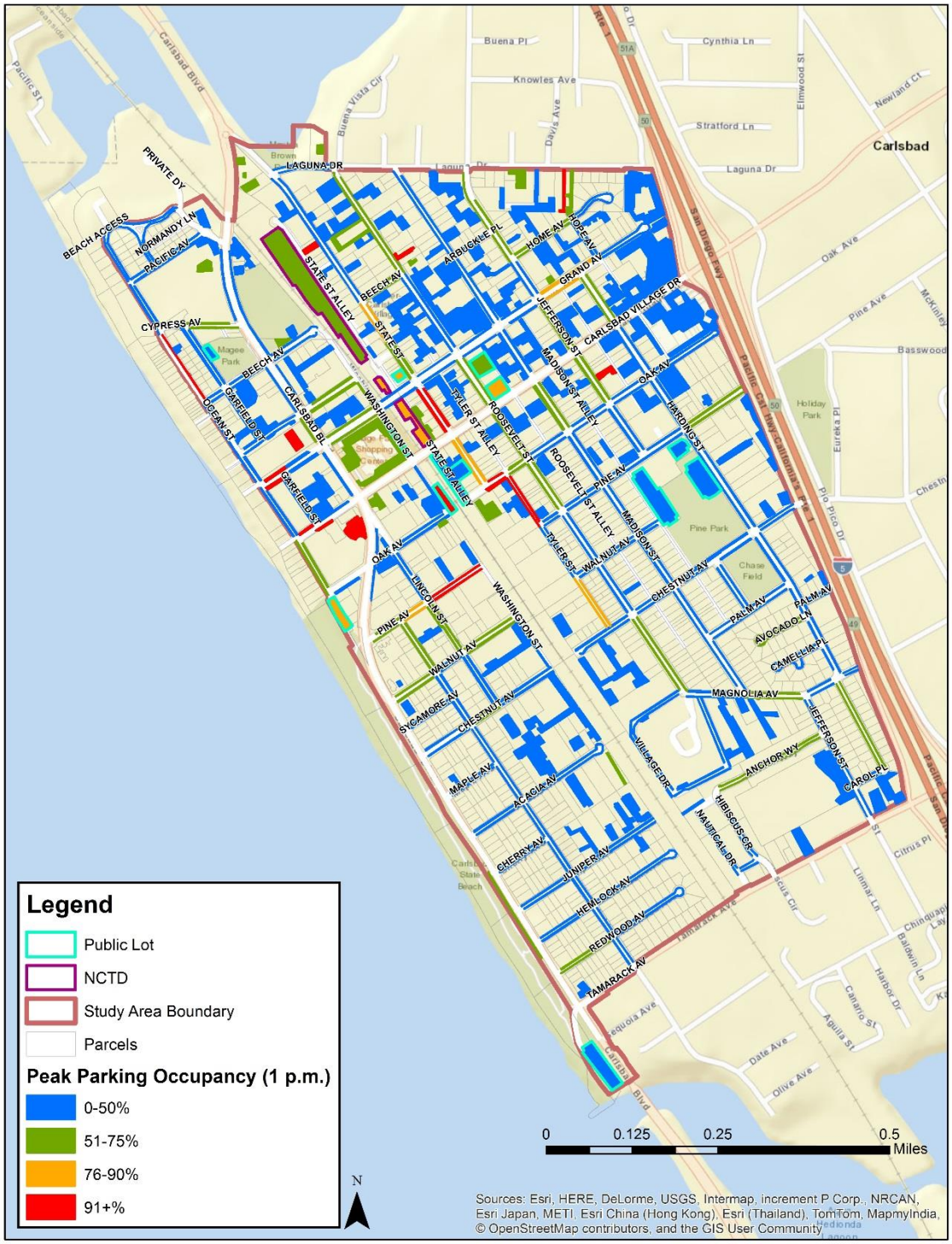
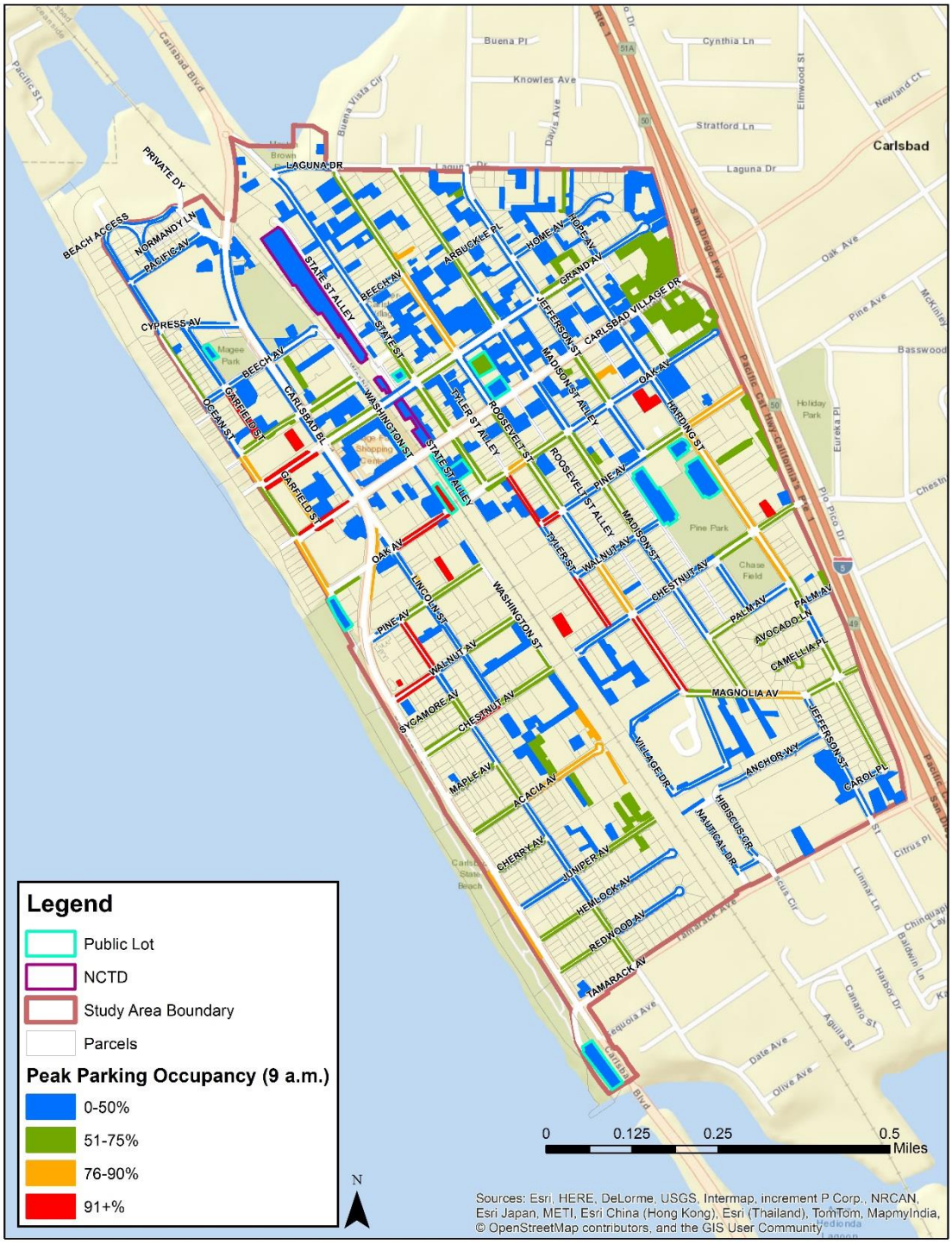


Figure 18: May Weekend Peak Parking Occupancy (9 a.m.)



July 2016 Analysis

Data collected in July represents the peak seasonal demands. The following are the average occupancies for the entire system during the peak hours on the days that data was collected.

- Weekday Peak Parking Occupancy: 53% (7 p.m.)
- Weekend Peak Parking Occupancy: 54% (7 p.m.)

As shown above, the July weekend peak hour (7 p.m.) parking occupancy was the greatest amongst the days that data was collected. During this period, the following occupancies were observed by parking type:

- On-street: 53% occupied
- Public Lots: 52% occupied
- NCTD Transit Lot: 45% occupied
- Private Lots: 36% occupied

The section on page 44 of this document examines the peak period parking occupancies of the facilities that are available to the public, on-street and public off-street facilities.

The parking occupancy trends in July are similar to those experienced in May. Just as in May, the data indicates that during the week, the Carlsbad Village area experiences a greater change in occupancies than the Beach and Barrio neighborhoods. Also similar to May, the weekend occupancy trends are more constant than those observed during the week. A breakdown of observed occupancy by neighborhood throughout the day can be seen in **Figure 19** and **Figure 20**.

Figure 19: July Weekday Parking Occupancy by Neighborhood

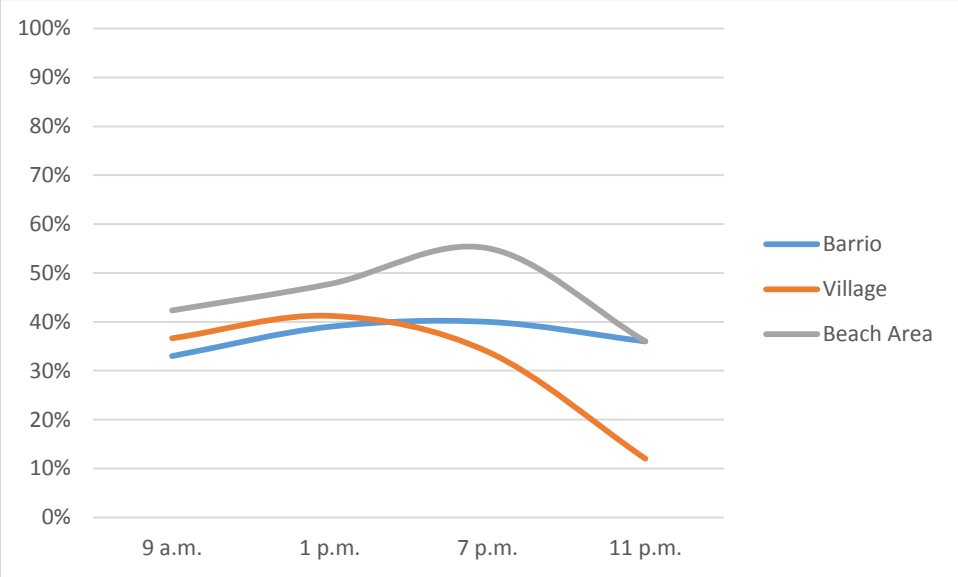
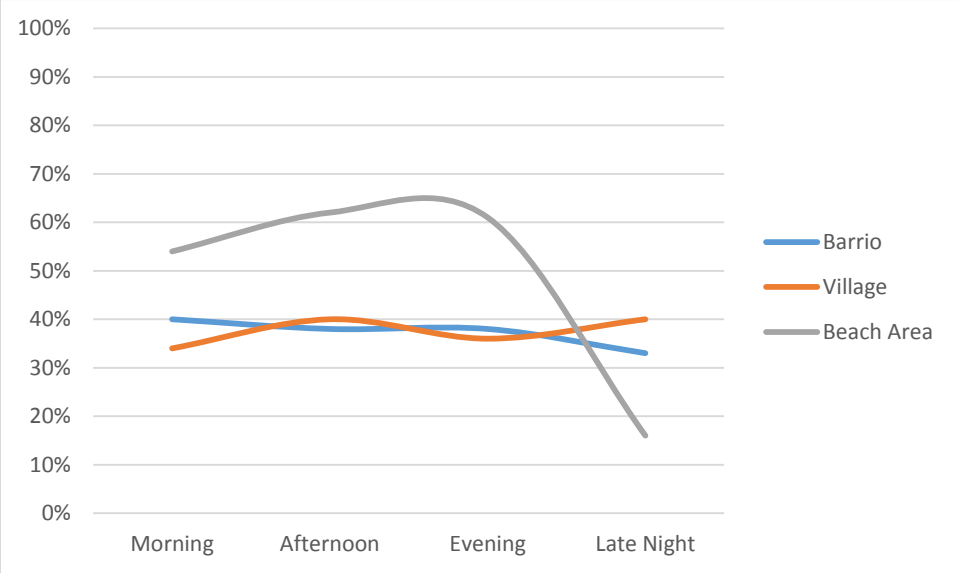


Figure 20: July Weekend Parking Occupancy by Neighborhood



Although the trends might be similar, the average occupancy for the study area increased by 5% between May and July. **Table 8** compares the parking occupancies by facility type throughout the study area. **Figure 21** and **Figure 22** on the following pages illustrate the parking occupancies throughout the study area during the weekday peak hour (7 p.m.) and weekend peak hour (7 p.m.). It should be noted that the occupancy maps illustrate the blocks where parked vehicles were observed, regardless of signed parking restrictions.

Table 8: July Weekday and Weekend Parking Occupancies by Facility Type

PARKING TYPE	TOTAL SPACES	DAY OF WEEK	MORNING (9 a.m.)	AFTERNOON (1 p.m.)	EVENING (7 p.m.)	LATE NIGHT (11 p.m.) *
On-Street	4,971	Weekday	43%	48%	50%	30%
		Weekend	50%	57%	53%	32%
Public Off-Street	730	Weekday	52%	58%	34%	N/A
		Weekend	23%	50%	51%	N/A
NCTD Transit Lot	511	Weekday	23%	62%	61%	N/A
		Weekend	22%	35%	45%	N/A
Private Off-Street	5,445	Weekday	33%	38%	35%	N/A
		Weekend	35%	36%	36%	N/A
Single Family Homes	567	Weekday	83%	73%	95%	96%
		Weekend	82%	72%	94%	96%

**The Late Night run was conducted on the on-street facilities only.*

Throughout the study area, the private parking experiences lower occupancies than the public parking facilities, nearly half the occupancy on the weekend. This distinction is further realized when observing the demands of each of the parking types by neighborhood. **Table 9** through **Table 11** compares the parking occupancies by facility type in each of the study area neighborhoods, Carlsbad Village, Barrio, and Beach Area.

Table 9: July Weekday and Weekend Parking Occupancies by Facility Type
Carlsbad Village

PARKING TYPE	TOTAL SPACES	DAY OF WEEK	MORNING (9 a.m.)	AFTERNOON (1 p.m.)	EVENING (7 p.m.)	LATE NIGHT (11 p.m.) *
On-Street	1,353	Weekday	44%	46%	42%	12%
		Weekend	44%	50%	46%	16%
Public Off-Street	274	Weekday	31%	34%	34%	N/A
		Weekend	30%	67%	60%	N/A
NCTD Transit Lot	511	Weekday	23%	62%	61%	N/A
		Weekend	22%	35%	45%	N/A
Private Off-Street	3,113	Weekday	34%	39%	30%	N/A
		Weekend	30%	35%	31%	N/A

**The Late Night run was conducted on the on-street facilities only.*

Table 10: July Weekday and Weekend Parking Occupancies by Facility Type
Barrio Neighborhood

PARKING TYPE	TOTAL SPACES	DAY OF WEEK	MORNING (9 a.m.)	AFTERNOON (1 p.m.)	EVENING (7 p.m.)	LATE NIGHT (11 p.m.) *
On-Street	1,784	Weekday	37%	43%	43%	36%
		Weekend	43%	42%	42%	33%
Public Off-Street	252	Weekday	18%	34%	16%	N/A
		Weekend	23%	19%	12%	N/A
Private Off-Street	916	Weekday	27%	32%	38%	N/A
		Weekend	38%	38%	32%	N/A

**The Late Night run was conducted on the on-street facilities only.*

Table 11: July Weekday and Weekend Parking Occupancies by Facility Type
Beach Area

PARKING TYPE	TOTAL SPACES	DAY OF WEEK	MORNING (9 a.m.)	AFTERNOON (1 p.m.)	EVENING (7 p.m.)	LATE NIGHT (11 p.m.) *
On-Street	1,834	Weekday	48%	54%	62%	36%
		Weekend	61%	76%	68%	40%
Public Off-Street	204	Weekday	22%	42%	42%	N/A
		Weekend	36%	46%	53%	N/A
Private Off-Street	1,416	Weekday	34%	38%	45%	N/A
		Weekend	44%	42%	52%	N/A

**The Late Night run was conducted on the on-street facilities only.*

The trends for July are similar to those found in May, where the public facilities in each of the three neighborhoods within the study area experience greater occupancies than the private facilities.

Even though there is parking available in the system, is it not accessible to the public for parking, making it difficult to find available spaces and contributing to user frustrations. However, there may be opportunities within the system to share the available parking resources to make spaces more available for public use.

Figure 21: July Weekday Peak Parking Occupancy (7 p.m.)

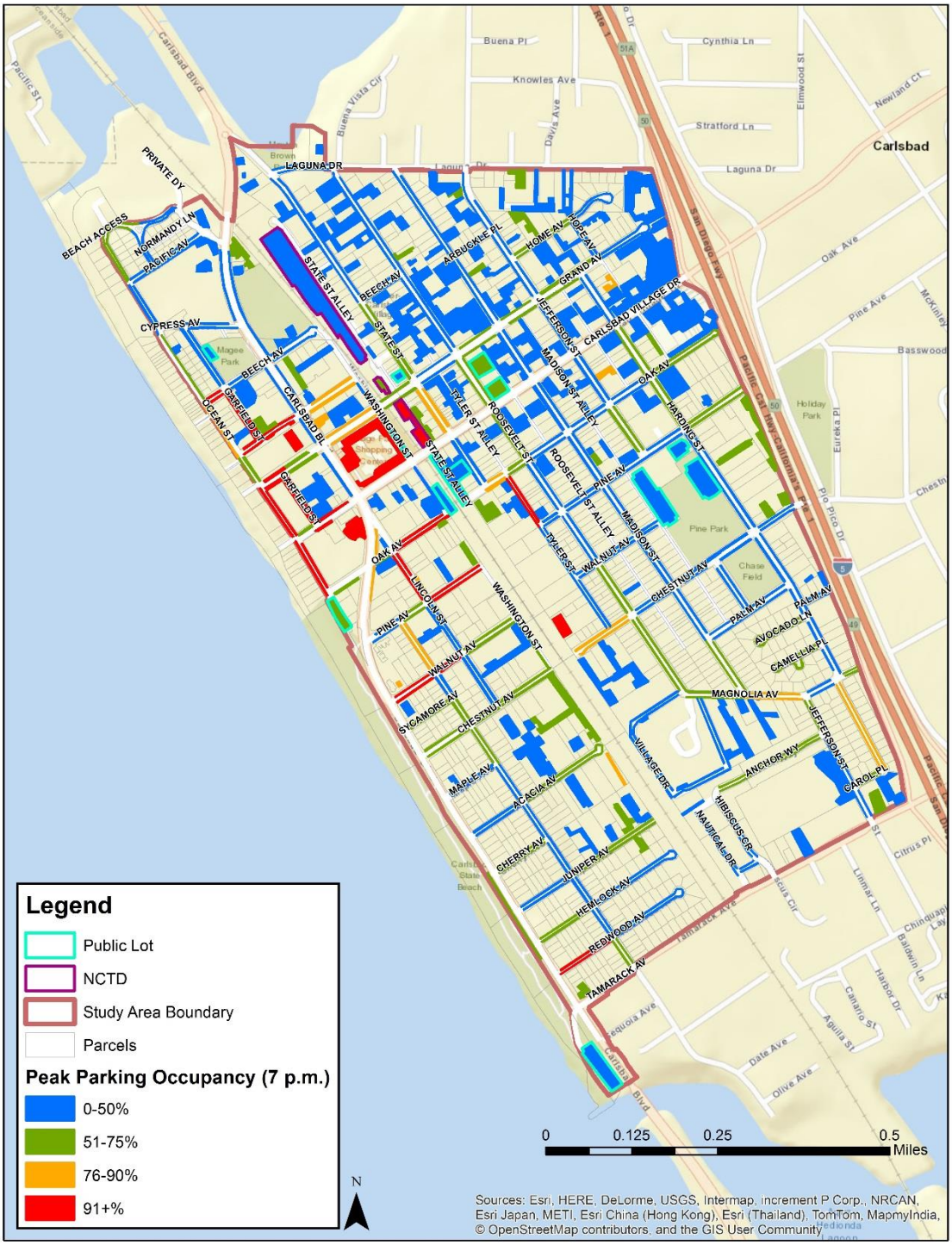
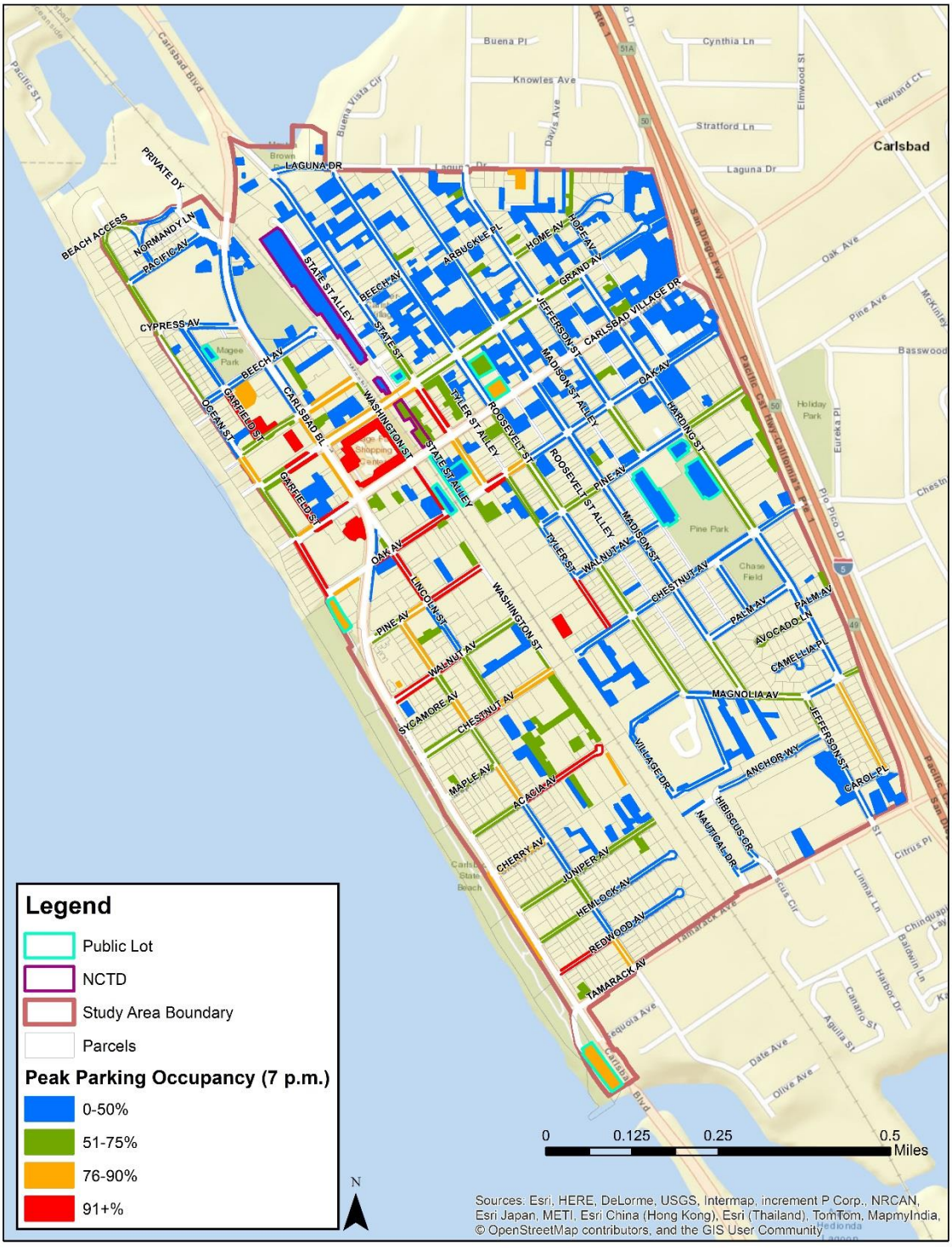


Figure 22: July Weekend Peak Parking Occupancy (7 p.m.)



Public Parking Analysis

During the public meeting, many participants expressed interest in viewing the parking occupancies throughout the system for the public facilities only. The following section examines the public facilities, which consists of on-street parking and public off-street parking. The intent of highlighting the public demands in this section are to fully understand the parking available to the public. The previous section has shown that the private facilities and NCTD lots are underutilized, however, public users cannot park in those facilities. The parking supply for public users is limited to on-street and public off-street facilities. The analysis below reflects the occupancies of those public facilities.

May 2016 Analysis

Data collected in May represents the off-season peak demands for the public parking facilities. The following are the average occupancies for the public parking in the entire system on the days that data was collected in May:

- Weekday Peak Parking Occupancy: 41% (1 p.m.)
- Weekend Peak Parking Occupancy: 55% (1 p.m.)

In May, the peak for public facilities was during the weekend at 1 p.m. During this period, the following occupancies were observed by parking type:

- On-street: 48% occupied
- Public Lots: 62% occupied

July 2016 Analysis

Data collected in July represents the peak seasonal demands. The following are the average occupancies for public parking in the entire system during the peak hours on the days that data was collected.

- Weekday Peak Parking Occupancy: 53% (1 p.m.)
- Weekend Peak Parking Occupancy: 54% (1 p.m.)

As shown above, the July weekend peak hour (1 p.m.) parking occupancy was the greatest amongst the days that data was collected for public facilities. During this period, the following occupancies were observed by parking type:

- On-street: 57% occupied
- Public Lots: 50% occupied

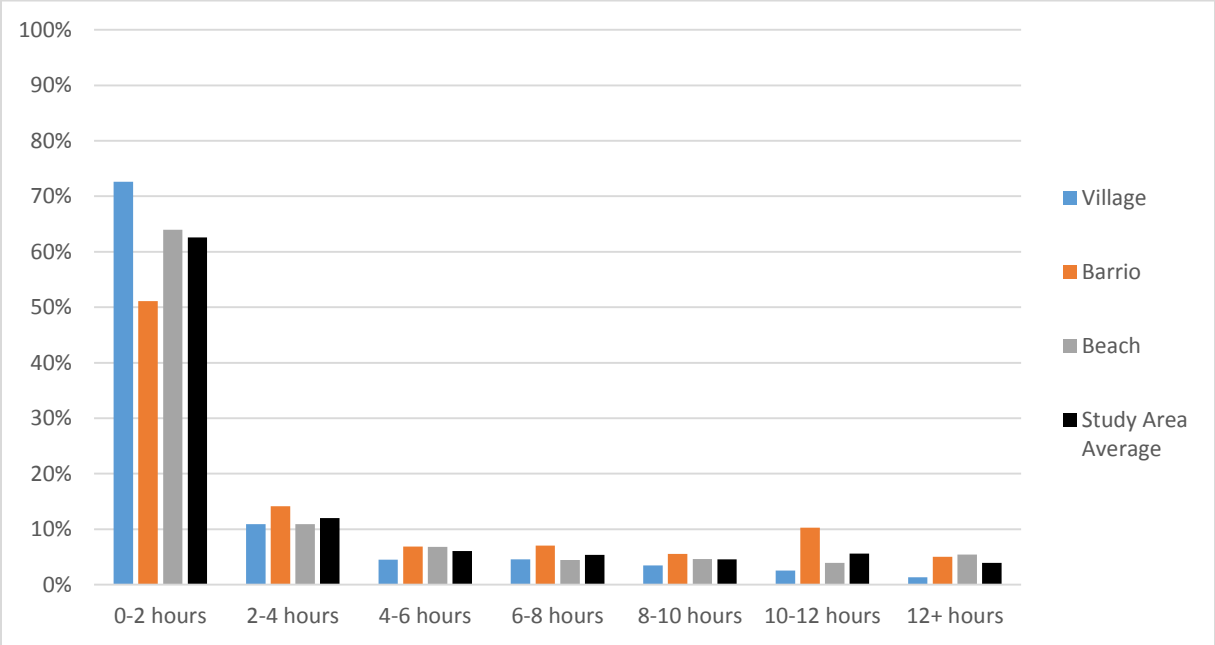
Average Parking Duration

In addition to occupancy data, the LPR technology allows for analysis of how long vehicles tend to park in the area. The length of stay information was analyzed for on-street parking facilities. Higher rates of turnover are typically encouraged for on-street parking to improve access to businesses, whereas long-term parkers are encouraged to use off-street facilities.

May and July presented similar duration trends, indicating that the majority of users (average of 63%) park on the street for two hours or less. In the Barrio, nearly half (49%) of the users are parking on the street for periods longer than two hours. This is indicative of the residential development in that neighborhood. This parking behavior varies greatly from that experienced in the Village, where 73% of the users are parking for two hours or less. Where these neighborhoods intersect, strategies may be sought to balance the competing parking behaviors.

Length of stay data throughout the study area for on-street facilities is shown in **Figure 23**.

Figure 23: May and July Average Length of Stay by Neighborhood for On-Street Facilities



Community Workshop #1 Summary

On August 24, 2016, the City of Carlsbad held a Community Workshop to discuss the ongoing Carlsbad Village, Barrio, and Beach Area Parking Study. The workshop was held between 6 p.m. and 8 p.m. at the Senior Center. At the workshop, the study team presented the data and findings from the surveys and data collection. During the workshop, the study team presented the project background information, findings from the surveys and data analysis, and next steps.

Following the presentation, attendees were encouraged to look at study area maps located on tables. The workshop was designed to express their concerns, potential ideas, and point out specific locations where they saw issues or opportunities. The workshop was designed to provide maximum opportunity to solicit verbal and written feedback by providing three stations where the same map was shown, allowing the group to disperse and allowing all participants a chance to make comments on the map and approach study team representatives. Following this breakout session, the group reconvened and the participants were allowed to ask questions of the study team. Attendants were also able to convey their thoughts and opinions on comment cards that were provided at the workshop.

There were approximately 90 workshop attendees, 83 comments written on maps, and 20 comment cards were submitted. These comments are summarized below into the following categories. Complete transcription of all of the written comments made at the meeting are provided in **Appendix F**.

- Multimodal transportation and Transportation Demand Management – The topic that received the most frequent comment was related to supporting alternative modes of transportation and parking management strategies that would reduce demands on facilities (18 comments on these topics). These comments suggested bike and pedestrian crossings over the railroad tracks and shared parking. Five comments were made supporting shared parking in underutilized parking lots. The only specific lot identified for shared parking opportunity was the bank parking lot for Sunday and holiday parking.
- New parking garages - Overall, the public did not support the construction of new parking facilities. There were eight comments that suggested that should construction of a parking facility be required or considered that the structure include retail on the first floor or be some other type of mixed-use facility. It should be noted that those eight comments did not offer support for a structure, but were rather suggesting that if a structure had to be built, that it be mixed-use.
- Paid parking – six comments were made with regard to implementing paid parking and five of them were adamantly against meters. One comment was made in favor of paid parking, suggesting that the revenues could support other modes of transportation and community improvements.
- Traffic Concerns – Many comments were made with regard to traffic concerns in the study area. Particularly, removal of the red curbs (1), location of bus stops (1), parking too close to stop signs (2), dangerous intersections (1), need for 4-way stop (1), creating Tyler St. a one-way street (2), handicap parking on Tyler St. (2), no support for roundabouts (6).

- Management and Enforcement - RV Management – eight comments were made suggesting that RVs were an issue and that their presence was causing issues with finding on-street parking. Part of this issue is the 72-hour law. Respondents stated that this was too long of a period to have a large vehicle parked.

  Four comments were made supporting a residential parking permit program

  Two comments were made to enforce existing time limits

- Lack of parking – Two comments were made that special events and restaurants take up available parking. The concern was that restaurants place tables on the street, in what would normally be parking spaces. The other concern was regarding apartment complexes and that residents utilize on-street spaces, creating a lack of availability of spaces.

- No problem – eight comments were made that specifically stated that there was no problem.

Findings

Collecting parking data within the community, as well as gathering public input, are integral components of understanding the parking behaviors, user frustrations, and identifying appropriate strategies for managing the system in a manner that makes sense for the community. The following summarizes the findings of the intercept survey, online survey, and parking data collection results:

- On-site and online survey results indicate that most people parking within the study area are able to find available parking quickly (within two minutes) and near their destination (directly in front of or within a block of their destination). However, a common perception remains that available parking in the study area is difficult to find close to destinations. As the occupancy analysis shows, there is available parking throughout the study area. However, in areas of high demand, toward the beach and commercial areas, the parking facilities are nearly at capacity during the peak period. Therefore, even though the system as a whole has availability, the experience for the user can become frustrating because spaces are limited in the desired parts of the study area.
- In the open comments, recurring comments included that they would not support the implementation of paid parking; they would like to see the existing parking time limits enforced, and that the main issue with the parking system is finding available parking near destinations.
- Comments from the public workshop stated that enforcement should be improved and that paid parking and parking structures were not supported. Support for multimodal transportation and shared parking was expressed at the meeting.
- The majority of business owners or managers indicated that they do not provide parking for their employees. 63% of employees noted that they park directly in front of or adjacent to where they work. However, business owners or managers indicated that they believe only 18% of vehicles utilizing the spaces closest to their business are by their employees. This indicates that there may be some lack of knowledge regarding which user groups use the spaces.
- 39% noted that they park in on-street spaces close to their destination. Typically, on-street spaces should be made available for customers so they have easier access to the businesses in the area. Employees parking in these spaces results in fewer on-street spaces near these businesses for customers.
- Enforcement of the existing parking regulations has been noted as inconsistent, allowing people to park freely throughout the study area. As a result, the system is not operating as effectively as it could be.
- The average occupancy for the entire study area during the peak is 54% (July weekend 7 p.m.), which is below the industry threshold of 85-90%. Occupancies were greater during the weekend than they were during the weekday for both May and July.
    - May Weekday Peak Parking Occupancy: 46% (1 p.m.)
        - On-Street: 42% occupied

        - Public Off-Street: 40% occupied
        - NCTD Transit Lot: 74% occupied
        - Private Off-Street: 31% occupied
    - May Weekend Peak Parking Occupancy: 49% (9 a.m.)
        - On-Street: 50% occupied
        - Public Off-Street: 24% occupied
        - NCTD Transit Lot: 21% occupied
        - Private Off-Street: 32% occupied
    - July Weekday Peak Parking Occupancy: 53% (7 p.m.)
        - On-Street: 50% occupied
        - Public Off-Street: 34% occupied
        - NCTD Transit Lot: 61% occupied
        - Private Off-Street: 35% occupied
    - July Weekend Peak Parking Occupancy: 54% (7 p.m.) – Peak period for all facilities
        - On-Street: 53% occupied
        - Public Off-Street: 51% occupied
        - NCTD Transit Lot: 45% occupied
        - Private Off-Street: 36% occupied
- The occupancies above summarize the percent occupancies for each facility type during the peak times for the study area as a whole. However, the different facility types peak at different times of the day and different days of the week when analyzed individually and not part of the overall study area analysis. The following summarizes the peak occupancies and times by facility type.
    - On-Street:
        - May: 50% occupied at 9 a.m. on a weekend
        - July: 57% occupied at 1 p.m. on a weekend
    - Public Off-Street: 57% occupied (July)
        - May: 62% occupied at 1 p.m. on a weekend
        - July: 58% occupied at 1 p.m. on a weekday

- NCTD Transit Lot:
  - May: 74% occupied at 1 p.m. on a weekday
  - July: 62% occupied at 1 p.m. on a weekday
- Private Off-Street:
  - May: 32% occupied at 9 a.m. on a weekend
  - July: 38% occupied at 1 p.m. on a weekday

- The following are the results of the public facility analysis.
  - May Weekday Peak Parking Occupancy: 41% (1 p.m.)
    - On-street: 42% occupied
    - Public Lots: 40% occupied
  - May Weekend Peak Parking Occupancy: 55% (1 p.m.) – Peak period for public facilities
    - On-street: 48% occupied
    - Public Lots: 62% occupied
  - July Weekday Peak Parking Occupancy: 53% (1 p.m.)
    - On-street: 48% occupied
    - Public Lots: 58% occupied
  - July Weekend Peak Parking Occupancy: 54% (1 p.m.)
    - On-street: 57% occupied
    - Public Lots: 50% occupied
- July experienced an increase in occupancies of 5% across the entire study area. However, certain areas experienced a far greater increase in occupancy. This increase is likely due to the influx of visitors which impacts parking availability and can cause frustration for regular users.
- The public parking experiences greater demands than the private parking. In the Village on the weekday the public parking operates at 70% occupancy whereas the private parking during the same day and time period operates at 34%. The higher use of public parking places a stress on the parking system and could be the cause of frustrations from daily users.
- The NCTD Transit Lot may provide an opportunity for shared parking. The maximum occupancy experienced in the lot occurs during the weekday afternoon (May 1 p.m.) is 74%. However, on the weekend, the NCTD lots peak with an occupancy of 39% (May 1 p.m.). Furthermore, the largest of the NCTD lots is only 15% occupied on the weekends and only 60% full at its peak (weekdays at 1 p.m.). The remaining available spaces can be utilized for public users.

- Occupancies throughout the study area are relatively low throughout the day and the parking system as whole has enough capacity to handle the demand. However, there are specific locations that experience high demands (greater than 90%), particularly areas within one or two blocks of the beach.
- The majority of the off-street parking in the study area is privately owned and operated. The private facilities tend to operate at lower occupancies than the public facilities. There may be opportunity to balance the demands in the area by sharing parking resources and allowing users to park in the private facilities.
- The majority of users in the study area are typically parking for less than two hours. However, 50% of the users in the Barrio stay longer than two hours, whereas users in the neighboring Village area tend to stay no more than two hours. Given the differing land development of these two areas and the differences in parking behaviors, appropriate parking management strategies will have to be identified that meet the differing needs of the two areas.

The information gathered through the on-site and online surveys indicate that users are able to find parking near their destinations relatively quickly (five minutes or less). Combine that information with the data collected stating that the occupancy for the entire system during the peak is 54%, well below the industry threshold of 85-90%, and it would appear that there isn't a critical parking issue in the study area today. However, the participants of the online survey also stated that their top issue with the parking system was a lack of available parking. The data analysis concluded that while the parking system as a whole has capacity, there are a number of on-street and off-street facilities close to the beach that experience occupancies greater than 90%. This could be the cause of users experiencing frustrations with available parking.